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University News

ONDAY, OCTOBER 9, 1989 Rs. 2.50

Students Unions in Universities

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Information Systems and Services

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Education and Higher Order Skills

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Planning Forums in Educational Institutions

PANJAB UNIVERSITY

Advertisement No. 9/89

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh by **31-10-1989**. Fourteen days extra time is permissible to persons who have to submit their applications from abroad.

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Note : 1. Candidates who have already applied for the posts of (i) Reader in French and (ii) Reader in Physical Education, with the desirable qualification in Health Education, in response to our Advt. No. 2/89, and (iii) Research Associate in CAS in Maths. in response to our Advt. No. 1/89, need not apply again, and their previous applications will be considered.

2. The Vice-Chancellor could place before the Selection Committee names of suitable persons for its consideration along with the applications received in response to the advertisement.
3. It is not obligatory on the part of the University to call for interview every candidate who possesses the essential qualifications.
4. The number of vacancies may change.
5. The University may also prepare a waiting list/panel as per rules, in order of merit, up to 3 persons, which shall be valid for a period of six months.

Cyclostyled copies of 'Detailed Instructions for Candidates' qualifications (essential & desirable), specializations, allocations and reservations concerning various posts and other details are separately available with the application form. These can be obtained from the Cashier, Panjab University, personally. The cost of application form (inclusive of application fee) is Rs. 15/-. The priced forms may also be had by making a written request to the Deputy Registrar (Estt.), Panjab University, Chandigarh, accompanied by a self-addressed stamped (worth Rs. 5-40) envelope of 23 x 10 cms. and a postal order of Rs. 15/- drawn in favour of the Registrar, Panjab University, Chandigarh.

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Editor :
SUTINDER SINGH

Students Unions in Universities

(Smt.) Sneha Joshi*, Nikhil Desai**

Many of the problems afflicting the university can either be prevented or solved through the involvement of students in the academic and administrative decisions which are relevant to their goals and activities. A university can be an excellent vehicle of students participation in the task of nation building. Student participation is not a static concept. It is an evolving concept and is intimately related to the progress of universities, improvement of academic standar ds and university reform generally. Whereas every university should make a constructive and deliberate effort to promote student participation, participation of students in academic life of the university involves a continuous dialogue between the teachers and the taught. It is a serious inadequacy in our university system today that in respect of matters pertaining to education or instruction, the system does not seem to provide a channel of communication between the teacher and the students, or between the administrative wing of the university and the students. Absence of such communication creates a feeling in the minds of the students that they do not have any share in the management of the university.

The role of the students unions is best defined in the recommendations of the Education Commission (1964-66) and aptly endorsed by the Gajendragadkar Committee (1971) which runs asunder :

"We are broadly in agreement with the recommendations of the Education Commission (1964-66) regarding students unions. The Education Commission had recommended as follows : 'Students Unions represent an important way of providing student participation in university life outside the classroom. Properly organised, they help in self government and self discipline, provide a healthy outlet for students energies and give the students useful training in the use of democratic methods".

Broad Principles

It is for each university to decide how its students unions must function and would welcome a good deal of experimentation. Some broad principles can be indicated.

(1) Membership of the student union should be automatic in sense that every student should be presumed to be its member. But every student should be expected to choose atleast one activity organised in the institution e.g. arts society, footbal club, drama association, etc. and pay the required subscription. There should be no separate payment for the membership of the various activity groups of the students union as such. Each of the activities will have funds of its own and these would be handled by appropriate committees. The funds of the central union, to the extent they are needed, would be formed by contributions from each activity committee. The university or college should also give aid to

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**Treasurer, M.S. University Union, Baroda-390 002.*

the Central Union as well as to the different activities.

(2) It may be desirable to elect office bearers, not directly by the large body of students (many of whom are freshmen), but indirectly by the different student societies in the university who would send selected representative to the Union executive.

(3) There should be some provisions for the disqualification of office-bearers. For instance, persons who have spent two or more years in the same class should be disqualified.

(4) The successful working of students unions depend to a large extent upon the mutual trust and confidence between the teachers and the students. The students union can provide excellent form and arena for this kind of interaction between the teachers and students. Greater teacher involvement in the Union activities should, therefore, be ensured. We would strongly urge for the establishment of a university or college union in which all teachers and students automatically become members. All committees of the union and various activity groups should have teachers on them and it should be their responsibility to guide the students tactfully on right lines without curbing their freedom to decide for themselves.

A student of today is going to occupy tomorrow all types of positions, low and high in various walks of life and therefore, if he or she has learnt to achieve his purposes, goals or preferences only through the agitational approach, noise, violence and organised resistance will be the order of the day in all walks of national life. Educational institutions provide normal behaviour among the students which is of much greater importance and much wider implications than is perhaps realized. If education is to be truly a training for life, it must train students to find more sensible ways of tackling such situations. The aim of education is the pursuit of knowledge and excellence and search for the truth.

The students are the pride and future hope of the country. They, with their unbounded energy and lofty idealism, can work wonders for the good of the country. Students have always welcomed any noble cause and put their heart and soul in its achievement. It is for the leaders of the community to give them high and lofty programmes, harness their vast energies and show their leadership and their worth in the enterprises of great honour and selfless service, (Bakshi, 1978).

Generally our co-curricular activities are exhausted by time and enfeebled by apathy and even killed by cynicism of do-nothingers. Wide press publicity given to a few incidents of student troubles obscures the fact that thousands of students of school and colleges carry on their studies in a calm and patient atmosphere. Only this overwhelming majority does not make news in the newspapers.

Basic Problems

There are many students who are misguided in their opinions of the university atmosphere. Some take advantage of too much autonomy and get distracted. Many a times they find plenty of time and no activity to do. These students could be diverted by the activities by students unions. On the basis of the objective studies as well as theoretical analyses four basic problems facing students all over the world could be identified.

A proper solution of these problems is vital if we are to maintain the required academic atmosphere within the campuses.

(1) *Personal Relations*

As a result of mass education, there is less of teacher taught interaction. As Grayson Kirk effectively puts it, 'students proclaim that they are little more than units in our anonymous mass numbers on a computer tape, and to the teachers faceless beings in a lecture hall. They insist that they have no opportunity to develop meaningful personal relationships with teachers who are indifferent to their needs and problems'. The neglected students are clamouring for attention through unrest and attempt at self assertion through indisciplined behaviour.

At higher levels in the educational ladder, teachers are becoming more interested in research than teaching. The importance of the problems of decreasing teacher taught contact in students unrest was brought out in the studies of Berkeley unrest by Gales. Combining social and intellectual activities on the campus, promoting discussions between staff and students, guidance programmes, etc., can go a long way in meeting this problem.

(2) *Objectives of Education*

Today's youth is faced with the dilemma of whether to strive for immediate satisfaction and success in vocational sphere or to strive for personal development and search for excellence. The atomising process of specialisation offers no breadth and unity of studies.

(3) *Need for Participation in Social and Political Activities*

Many authorities say that, taken as a whole, the students of this generation are brighter and have a higher sense of responsibility and awareness of social problems. In a country where uneducated masses elect the government, the students are to some extent justified in feeling that they have some solutions to offer in solving today's problems. Therefore students could be allowed to participate in the functioning of the university.

(3) *Self-government*

Modern education requires several years of advanced study and the students are quite grown up. In underdeveloped countries students have no chance of getting part time employment and have to depend on their parents for support. While trying to cater to the needs and attempting to solve the problems of students by specific programmes and techniques, the authorities should remain flexible and make the necessary changes and modifications in their administrative procedures and educational methods in accordance with the social changes. An important aspect is to have the right attitudes towards the students (Mehta, Prayag, 1971).

Model Constitution

The following model which is adapted from M.S. University of Baroda Act, may provide a good example of a union constitution.

. *Aims and Objects*

The aims and objects of the Union shall be :

(i) to hold debates so as to enable students to learn the art of debating,

(ii) to arrange public lectures so as to stimulate interest in cultural and public affairs,

(iii) to promote social intercourse amongst the students of the Union by developing the Union as a club for the students,

(iv) to further the academic and social interest of students generally by maintaining a library, a reading room, a writing room, a games room and refreshment room,

(v) to maintain a cooperative store and a co-operative bank, and

(vi) to develop a sense of social service.

II. *Members of the Union*

(a) The members of the Union shall be ordinary members, associate members, honorary members and life members. All students enrolled in the various faculties of the University shall be ordinary members of Union.

(b) The members of the teaching staff of the University shall be associate members. They shall be entitled to all the privileges of the ordinary members except that of voting and contesting the election.

(c) Honorary members shall be persons of public eminence who may from time to time be elected by the members at a special private business meeting on the recommendation of the Executive Committee.

(d) Life members shall be those who have ceased to be students of the University, but wish to continue their connection with the University through the Union. A list be kept in the office of the University of all life members of the Union with their permanent addresses and the list shall be updated before the beginning of every academic year.

(e) Ordinary members shall pay Rs. 5/- per year, which shall be collected along with University fees and the amount will be transferred to the Union account not later than November 1, each year. Associate members shall pay Rs. 5/- per year and the amount will be transferred to the Union account not later than August 15 each year. Honorary members shall be charged no fees. Life members shall pay a composition fee of Rs. 10/-

The students union should hold debates so as to enable students to learn the art of debating. It should also arrange public lectures so as to stimulate interest in cultural and public affairs. Union could be developed as a club so that students of the union could have interaction. It can establish a library, a reading room, a games room and refresh-

ment room. Cooperative store could be started for the benefit of students.

Presently the students unions attract those students who aspire to become leaders in politics. Therefore, it cannot attract good, intellectual group of students in the students union. Even those teachers who have their own vested interest participate in the activities of the students union. In majority of the cases the union gets active only during election of college/university union days or on youth fastivals. Rest of the year its presence is not felt. During the election period so called leaders become very active and after they get elected, they are involved in only non-academic activities. Those exuberant youth could be channelised by invulnerable activities organized by the students unions, with the help of good teachers who can guide these students.

The latest announcement by the Govt. giving voting right at the age of 18 years to the youth, has raised a number of problems. Shri P. Shivshankar, Union Minister for Human Resource Development in his convocation address at 37th convocation of M.S. University of Baroda said 'In a developing society which is aspiring for structural changes through democratic means, the youth have a crucial role to play as agents of change. Indeed, no education would be complete unless it gives students an awareness of the political system and also furnishes strength and vitality to shape and guide the destiny of the nation. Today, we would like the youth of India to function within the larger social milieu and interact with the political and economic reality. It is with this objective that our Government has reduced the voting age to 18 years so as to ensure the full participation of the younger generation, particularly the students, in the political and democratic processes'.

The youth needs to be oriented in parliamentary democracy. They should be aware of political philosophies of various political parties. Otherwise, university campus will be a political battlefield. The students unions can play a significant role in preparing the students for this political development. If done with care, this can create wonders in the university management. □

UNIVERSITY OF DELHI

DELHI-110007

No. Estab. IV/124/89 **Dated : the 27th September, 1989**

Applications in the prescribed form are invited for the following posts :

Sl. No.	Department	Post	No. of Vacancies	Scale of Pay
1.	Central Office	(i) Junior Technical Officer	One	Rs. 2000-60-2300-EB-75-3200-100-3500
		(ii) Senior Technical Assistant	One	Rs. 1640-60-2600-EB-75-2900
		(iii) Data Entry Operator	Three (1 reserved for Scheduled Caste 1 reserved for Scheduled Tribe)	Rs. 950-20-1150-EB-25-1500

All the posts carry DA, CCA and HRA etc. as admissible under the rules in force in the University from time to time.

QUALIFICATIONS

Junior Technical Officer : Essential : Post-graduate degree in Arts/Science/Mathematical Sciences/ Commerce/Economics/Computer Science with two years administrative experience involving office work using microcomputers and related software packages. **Desirable :** Two years experience pertaining to Office Automation.

Senior Technical Assistant : Essential : Diploma in Engineering or Electronics or B.Sc. in Science/ Mathematical Statistics/Computer Science. **Desirable :** Two years programming experience in HLLs; and indepth familiarity with microcomputers and related software.

Data Entry Operator : Higher Secondary/Matriculation, experience in Operating Electric Key Punching Machine (Numerical and Alphanumerical) and knowledge of handling Computer input/output work.

The prescribed application forms can be had from **Room No. 205, Estab. IV Section of the University from 9.30 a.m. to 12.30 p.m. and 2.00 p.m. to 5.00 p.m. either personally or by sending a self-addressed envelope** (size 13 cm x 28 cm.) with postage stamps worth Rs. 6/- addressed to **'The Registrar, University of Delhi, Delhi-110007'.**

Applications (separate for each post) complete in all respects should be addressed to the "Registrar, University of Delhi, Delhi-110007." **The last date for receipt of applications is 25th October, 1989.**

Madan Mohan
REGISTRAR

Information Systems and Services in India : Trends and Prospects

P.B. Mangla*

Background

After India won independence in 1947, the ational government gave due recognition to the vital ole well-organised library and information services vould play in the programmes of national develop- nent and reconstruction. The need for developing n effective system for information transfer became ll the more essential because of factors such as (i) vast proliferations in the universe of knowledge and he resultant phenomenon of 'document explosion' n the world as a whole, and (ii) the varied and complex needs of users for information in R & D activities, and in research programmes for socio-economic development of the country.

As a result, a fairly good infrastructure of library and information services has been developed in the country during the past four decades or so. To highlight some of the achievements, it may be mentioned that the country now has : (i) four national libraries, viz. the National Library at Calcutta, the National Science Library and National Medical Library at Delhi and the Indian Agricultural Research Institute Library at Delhi which can also be considered as the national agricultural library, (ii) an infrastructure of public library services in almost all the States and Union Territories with public library legislation in seven States, viz. Tamil Nadu, Karnataka, Maharashtra, Andhra Pradesh, West Bengal, Manipur and Kerala, (Haryana has also enacted the necessary legislation in Sept. 1989), (iii) libraries of varying sizes and services in colleges, universities, institutions of higher learning, research laboratories and institutions, as well as government ministries/departments, (iv) bibliographic control of Indian publications with the publishing of the Indian National Bibliography since 1958, (v) documentation services at the national level provided by the Indian National Scientific Documentation Centre (INSDOC), the Defence Science Information and Documentation Centre (DESIDOC), and National Social Sciences Documentation Centre (NASSDOC), (vi) information systems in science and technology, medical and health science, environmental services, etc., and (vii) educational and research facilities in library and information science in about 60 library schools.

Several institutions such as Bhabha Atomic Research Centre (BARC) at Bombay and the Indian Council of Agricultural Research (ICAR) are already functioning as input centres for the international data bases, International Nuclear Information System (INIS) and International Information System for Agricultural Sciences and Technology (AGRIS), respectively. Collaboration with several other global information programmes and data-bases, such as World Information System for Science and Technology (UNISIST), the Regional Network for the Exchange of Information and Experiences in Asia and the Pacific (ASTINFO), Asia Pacific Information Network in Social Sciences (APPINESS), Lockheed Online Information Retrieval System (DIALOG) has been developed so as to have an access to the information resources at the international level. Several special libraries and information centres provide such services as Selective Dissemination of Information (SDI), Current Awareness Service (CAS), repackaging of information and referral services. Computerized information services are already extended by several special libraries in the country. Science Information Centre at Bangalore organized by the University Grants Commission aims at providing computerized bibliographic information to teachers and other researchers in the country.

Further developments are envisaged during the period of the 8th Five-Year Plan, 1990-95. A Working Group to make recommendations for this period has already been appointed by the Planning Commission, Government of India. The two reports : one by the Planning Commission Working Group on the Modernization of Library Services and Informatics for the Seventh Five Year Plan (1985-90) submitted in 1984, and the other called **National Policy on Library and Information Systems : A Presentation** submitted in May, 1986 by the Committee on National Policy and Information Systems appointed

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by the Government of India, Department of Culture are some of the noteworthy developments in this direction.

Emergence of Information Systems

Like several other countries, in India also libraries, documentation centres and information centres got established as independent units. Some of the institutions which have played a significant role in building up information resources and services in the country are : Indian Scientific Documentation Centre, Bhabha Atomic Research Centre, Indian Council of Agricultural Research , Indian Council of Social Science Research, Council of Scientific and Industrial Research, Electronics Commission, Indian Space Research Organisation, Indian Council of Medical Research and the University Grants Commission. Some of the R & D units in industries and private institutions have also been playing active role in this direction.

Scattered resources, inadequate communication linkages, lack of proper cooperation and coordination have however been some of the weak points of these libraries, documentation centres and information centres. Though the need for developing systems of cooperation and coordination between them had always been emphasised yet it was only during the mid-1970's that concrete steps were taken in this direction. The underlying need for developing inter-linkages between them has been emphasised in order to ; (i) develop programmes of sharing of resources and services so as to minimise duplication and maximise the utilization of financial resources and other facilities, and (ii) provide access to their resources so that any user living anywhere may have the required information at a time when he need it and in a form that would best suit his purpose. Some of the developments in the country during the past few years in telecommunication and information technology which provide optimism for fruitful developments in this direction are : (i) use of satellite communication technology, and (ii) increasing availability of microprocessors, and growth of indigenous computer industry.

It may be added that the national investment on R & D and related science & technology activities in the country during 1986-87 is estimated to be of the order of about 1.1 per cent of the Gross National Product (GNP). The number of personnel employed in R & D institutions including those in R & D units of public and private industries has increased at a fast pace since 1950. It was estimated to be around 241000 in 1986. Also, significant achievements have been made in the country in agricultural research and industrialization including small scale industries both in public and private sectors.

These developments highlight the need for organizing information systems and services so as to serve different user-groups with wide variations in levels of education and interests in the country. Some of these are discussed in the following sections.

National Information Systems in Science & Technology (NISSAT)

In the overall context of Unesco's programmes viz. UNISIST and National Information Systems (NATIS), the Government of India in 1971 made a request to Unesco for a short-term mission of consultant for advising the Government about the establishment of an information network in Science and Technology in the country. Dr. Peter Lazar, who worked as a consultant submitted a report on NISSAT in 1972. At the Government level, the proposal for establishing NISSAT under the Department of Science and Technology (DST) was duly recommended by the Panel Group for the Information Sector of the high-powered apex body called the National Committee on Science and Technology (NCST) for the Five-Year Plan 1974-79 and its implementation was finally authorised in early 1977. With the reorganisation of the Government of India in 1985, NISSAT was put under the charge of the Department of Scientific and Industrial Research (DSIR) in the Ministry of Science and Technology. NISSAT, which is rather a programme than an information system as such, was formally launched in September 1977. It is being implemented as a decentralized network involving standardized and mutually compatible systems for collection, storage and dissemination of information. The NISSAT headquarter at present functions as the national focal point in the field of S & T information.

Overall Objectives

The overall objectives of NISSAT are to interlink and coordinate a large number of systems, sources and services into an effective information network under a coordinating agency. Gaps in information sources and services are to be identified and filled up accordingly. Internationally compatible national standards and guidelines for information-handling techniques are to be evolved and applied to facilitate

interchange of information at national and international levels.

NISSAT Network

The NISSAT Network comprises the following :

(i) Sectoral Information Centres (SIC)
(ii) Regional Information Centres (RIS)
(iii) Other specialized services

One of the guiding principles of NISSAT has been to make maximum exploitation of the existing resources and facilities, particularly in view of the usual financial constraints for the programme. The system has already taken steps to integrate and coordinate the existing sources and facilities and to fill up the gaps rather than to duplicate them or to build up new ones. Some of the existing information centres and services were upgraded whenever required by providing additional inputs from NISSAT so that services at the national level could be offered by these centres.

Role of the Sectoral Information Centres (SICs)

The SICs are expected to meet the information needs concerning a particular discipline, mission or product. A SIC should coordinate its activities with the other relevant information centres called Local Information Units (LIUs) in that particular field.

A SIC has therefore to be part of a national level research laboratory engaged in R & D work in that particular discipline, mission or product so that services of subject specialists would also be available for various jobs such as abstracting information analysis, etc. This would also help in a better utilization of the information facilities and products created by the Centre.

The main functions of these SICs include all those areas concerned with the planning, coordination and cooperation of their activities as well as acquisition, organization and dissemination of information to the clientele.

The following five Sectoral Centres have been established till now, the first four in 1977 and the fifth one in 1981 :

(i) National Information Centre for Leather and Applied Industries (NICLAI) at Central Leather Research Institute, Madras.
(ii) National Information Centre for Food Services and Technology (NICFOS) at Central Food Technology Research Institute, Mysore.
(iii) National Information Centre for Machine Tools and Production Engineering (NICMAP) at Central Machine Tools Institute, Bangalore.
(iv) National Information Centre for Drugs and Pharmaceuticals (NICDAP) at Central Drug Research Institute, Lucknow.
(v) National Information Centre for Crystallography (NICRYS) at the Institute of Crystallography, Madras.

Some of the other areas in which such centres will be established in future are: Small Scale Industries, Textiles, Minerals, Chemicals and Aeronautics.

Also, the Local Information Units (LIUs) as envisaged in the original plan for each SIC would be identified and supported to help in developing a national network of information services in that particular field.

Development of Infrastructure and Services in the SICs

During the past 10 years these SICs have been provided financial support by the NISSAT so as to augment their equipment facilities, information resources and publication activities. Each of these centres has consequently built up large document collections and has acquired a wide range of equipment items such as plain-paper copier, microfiche reader-printer and processing system, off-set printing system, etc. In addition some of them have acquired their own computer system e.g. National Information Centre for Food Science and Technology (NICFOS) and National Information Centre for Drugs and Pharmaceuticals (NICDAP) or use the computer facilities of their parent organization e.g. National Information Centre for Machine Tools and Production Engineering (NICMAP) or make use of the one available in some other institutions locally e.g. National Information Centre for Leather and Allied Industries (NICLAI) uses the facility at the Indian Institute of Technology, Madras.

Each of the first four SICs provides a wide range of information services such as Current Awareness Service (CAS), Selective Dissemination of Information (SDI), translation, reprographic and micrographic services. It prepares state-of-the-art reports,

subject bibliographies, directory of the on-going projects, and does repackaging of information on a regular basis to meet the varied interests and demands of the clientele. In addition, these centres organize seminars, lectures, etc. on the basis of their interest and activity.

NICRYS which is the youngest among the Centres, differs from others in the sense that it provides both hard and soft data in a limited area, namely, organic chemical crystallography. These data are compiled on global basis at Cambridge (U.K.) by the Cambridge Crystallographic Data Centre. These are computerized there and the data tapes are made available to NICRYS for dissemination in India. The current data-base includes information on : (i) compounds: organic and organometallic, excluding polymers and proteins, (ii) Techniques : crystal structures determined by X-ray or neutron diffraction, and (iii) Structures : for each structure three-dimensional coordinates determined for the atoms.

NICRYS also publishes a quarterly newsletter of its activities and of various items of interest to crystallographers in chemical sclences in India. It is proposed to augment the activities of NICRYS by extending the data files to inorganic data, data on biological molecules, X-ray powder data, etc. in near future.

Regional Information Centres (RICs)

In view of the large size of the country, it was agreed in the original plan that a system of Regional Information Centres (RICs) to act as contact points be created in the NISSAT network. However, because of various reasons, including financial constraints, these Centres are yet to be created.

Other Activities under NISSAT

Among the several specialised services provided or experiments carried out under the NISSAT, a few may be mentioned as follows :

(a) *Computerized SDI Service using Commercial Databases*

With assistance from Unesco, this service was started in January 1976 using the IBM 370/150 computer of the Indian Institute of Technology, Madras with the **Chemical Abstracts Condensates.** A few users from Asian countries also participated in this experiment. From January, 1977, INSPEC A & B and COMPENDEX databases were added to the SDI service and the number of profiles was increased to about 300. Expenses for the SDI, which was initially free of charge, were met from the NISSAT budget. After the initial free service, a pricing mechanism was introduced later on. The project however could not continue because the experience was not quite encouraging.

(b) *On-line access to Foreign Databases*

A few demonstrations to have on-line access to foreign databases such as European Space Research Institute/Remote Console (ESRIN/RECON) Database system at Frascati (Italy) and European Space Agency (ESA) database were held in 1976 and 1981, respectively. However, a system to have online access to international databases such as DIALOG and others on regular basis is yet to be made operational in the country.

(c) *Creation of Databases*

NISSAT has by now promoted the development of several databases notable among them being :

(i) Current Research Projects on S & T
(ii) Directory of Testing Facilities
(iii) National Union Catalogues

These have been developed by INSDOC.

Besides these, NISSAT has sponsored special studies and projects on different areas of information processing and dissemination, micrographics, manpower development, etc.

International Collaboration

NISSAT has also been playing an active role in bilateral cooperation programmes in S & T Information with several countries such as USA, USSR, France, FRG and GDR within the overall framework of India's agreements in Science and Technology. The NISSAT Advisory Committee functions as National Committee on UNISIST in India as well as for collaboration with Unesco including ASTINFO. It also collaborates with several other programmes such as International Referral System for Sources of Environmental information (INFOTERRA), Commonwealth Regional Renewable Energy Resources Information System (CRRERIS) and others.

Institution based Information Systems

Though not operating as information systems as such two institutions, viz., INSDOC and DESIDOC which have been playing an active role in the dissemination of scientific information in the country at the national level also deserve our attention. A brief account of their activities is given below :

(i) *Indian National Scientific Documentation Centre (INSDOC)*

With technical assistance from Unesco to provide information support to scientific community in research organizations and industries INSDOC was established in 1952 as a constituent unit of the Council of Scientific and Industrial Research (CSIR). Since 1963 when administratively it became an independent unit with a full-time Director, it has expanded its scope of programmes to include activities such as computer-based information services and developing a National Science Library. It has three Regional Centres at Bangalore, Calcutta and Madras to survey and utilize information resources of the region and meet the information requirements of the users in those regions.

The main objectives of INSDOC are :

- to develop collections of relevant sources of information in the field of Science and Technology to complement and supplement the total national document sources;
- to render all appropriate and feasible information service in the field of science and technology;
- to develop appropriate linkages with the information systems and services organized in the country;
- to establish a national repository for reports and scientific works of the nation (both published and unpublished) and be a channel through which this information is made available within and outside the country;
- to contribute to advancements in information science and technology including documentation and library science through research and other activities;
- to adopt and promote appropriate technologies and management practices to enhance capabilities and productivity of information networks and services in the country; and
- to participate effectively in international information exchange of scientific matters.

To achieve these objectives INSDOC provides several services such as document supply, preparation of specialized bibliographies, translation, reprography, printing, preparation of audio-visual materials for scientific instructions, CAS and SDI. The National Science Library at INSDOC has built up a comprehensive collection of Indian Scientific Literature and other scientific publications supplementing the collections already available in other scientific libraries in the country. It provides reference and bibliographical services and acts as a referral centre for S & T information to R & D institutions and industries in the country. For dissemination of scientific information it brings out the following journals on regular basis :

(a) Indian Science Abstracts : A fortnightly abstracting service of scientific literature published in Indian Journals, Conference proceedings, theses, reports, patents and standards;
(b) Russian Scientific and Technical Publications: a bi-monthly bibliographical list of Russian publications received from the Soviet Union under Indo-Soviet Scientific and Technical Agreement;
(c) Contents list of Soviet Scientific Periodicals : a monthly list reproducing the contents pages in English of 250 Soviet Scientific periodicals; and
(d) National Index of Translations : a monthly list of documents translated by the major R & D institutions in India.

In addition, INSDOC has brought out directories giving information about scientific institutions, scientific periodicals, scientific information services and facilities, on-going research projects, etc. in the country. Its recent National Union Catalogue of Scientific Serials in India (NUCCSI) listing about 35000 titles of serials available in about 800 scientific institutions in the country is computer-based and is a remarkable achievement in the field. This data will be kept updated and made available to the users through supplements and also through the proposed national computer network.

At the international level, INSDOC operates as Associated Centre for ASTINFO. It functions as the national centre for ISDS and assigns International Standard Serial Number (ISSN) for serials published in India. It has been designated as the focal point in India for the proposed South Asian Association for Regional Cooperation (SAARC) Documentation

Centre. It has bi-lateral exchange programmes with several countries and actively participates and coordinates activities with other information systems within the country.

(ii) *Defence Scientific Information and Documentation Centre (DESIDOC)*

Recognising the value of scientific information in defence research, the Defence Research and Development Organization (DRDO) of the Government of India created a Scientific Information Bureau (SIB) in 1958 to collect and process S & T information of Defence interest and disseminate it to the concerned R & D scientists and other agencies of the Ministry of Defence. In 1967 SIB was reorganized and renamed as DESIDOC with wider scope and responsibilities. Since 1970 it has been functioning in the DRDO as a central agency to collect scientific and technical information from various published and unpublished sources, process it in different usable forms and disseminate the same to about 40 DRDO laboratories and several other establishments of the Ministry of Defence. It is responsible for developing a database and an information system in Defence Science and Technology and coordinate the library and information activities of the DRDO as a whole. It is also expected to carry out R & D work in information science relevant to defence needs.

The major functions of DESIDOC may be summarized as follows :

(a) Collection, processing and dissemination of information. For this purpose it has built up a large document collection and disseminates the information by preparing indexes, abstracts, digests and state-of-the-art reports. It provides CAS and SDI services to its clientele, Some of its regular publication are :

— Patents Information Alert (bi-monthly)
— Defence Reports Abstracts (bi-monthly)
— DESIDOC List (bi-monthly)
— Science Abstracts from Foreign Languages Journals (Quarterly)
— DESIDOC Bulletin (bi-monthly)

(b) Literature searches
(c) Compilation of Union catalogue of DRDO libraries
(d) Translation Bank, Training and Consultancy, Reprography and printing

Computerization of Information Services

To meet the enormous information needs of the scientists working in DRDO laboratories establishments and other institutions such as CSIR, Universities etc., DESIDOC has already developed the software for creating a database of scientific information and for on-line searching and information retrieval on the Prime-750 system available in the DRDO at Delhi. Computer-based SDI and retrospective information services are being provided and online access to international databases is being developed.

A computer based information network called DRDO Information Retrieval System (DRDO-IRS) covering libraries and Technical Information Centres (TICs) of the DRDO laboratories and establishments is being planned. Under this plan, details of the documents received by them will be sent to DESIDOC for inputting into the central database and the prints out will be sent to the concerned laboratories/ establishments. This system will ensure that scientists of DRDO are intimated as and when documents of their interest are received in these libraries and TICs. The system would provide project-oriented and mission-oriented information as well.

DESIDOC collaborates with DRDO in the publishing of its quarterly journals, viz. Defence Science Journal and R & D Bulletin. It also organizes short-term courses in areas such as information science, computerbased information service, indexing and abstracting.

Proposed Information Systems

Although there are proposals to establish information systems in different other areas falling under the broadbased Science and Technology, Social Sciences and the Humanities, the two which deserve special mention are those discussed below :

National Information System in Social Sciences (NISS)

As mentioned earlier, research in social sciences in India received a great impetus only after independence because of the vast programmes of socio-economic development in the country. Consequently several research institutions have been established. Universities and other institutions of higher learning

have also given a great thrust to studies and research in different aspects of social sciences. The establishment of Indian Council of Social Science Research (ICSSR) in 1969 can be called a great landmark in this direction.

These researeh institutions, universities and other organizations have developed large and rich library collections. The number of these which are comparatively larger in size and provide extensive bibliographical and reference services to their clientele should be not less than 250. They are scattered all over the country. The National Social Science Documentation Centre (NASSDOC) at the ICSSR at New Delhi has undoubtedly been playing an active role so as to supplement the information and library services in the country by building up a comprehensive collection of different categories of documents such as doctoral dissertations, serial publications; abstracting, reprography and translation services; and compiling union catalogues of different categories of documents, etc.

The need for an Information System in Social Sciences has always been emphasised and well accepted not only by scholars but also by the concerned authorities. Some years ago the ICSSR even appointed a Working Group to prepare a report on this aspect which was duly accepted by it. Unfortunately however, it has yet to be implemented. It is hoped that such an Information System would be duly created during the 8th Five-Year Plan, 1990-95.

The proposed model for the NISS more or less is that of NISSAT. It should comprise the following with the NASSDOC as the national focal point :

(a) Sectoral Information Centres
(b) Regional Information Centres
(c) Other specialized services.

The need for establishing a National Social Science Library on the pattern of National Science Library has also been emphasized. The usefulness of computers and other tools of new information technology to provide proper linkages between these libraries and information centres as well as to provide on-line access to information to scholars with local and foreign data-bases has been well accepted.

Information and Library Network (INFLIBNET)

In early 1988 the University Grants Commission (UGC) constituted a committee on National Network System to suggest measures to network libraries in the country, so as to share their literature resources towards optimum utilization and to avoid duplication in holdings, to the extent possible. The report under the title 'Development of an Information and Library Network; Report of the Inter-Agency Working Group' was published by the UGC in December 1988. The Report having xxxi, 473 pages (including appendices pp. 259-473) has gone into the matter at great length covering different aspects viz. Output and Services, INFLIBNET Organization, Standardization for Information Handling, Application Software Requirements, Computer Hardware, Technical Specifications, Network Architecture-communication, Data Capturing and Data Preparation, Manpower and Training Needs, Management Mechanism, Implementation Mechanism, and Cost Implications.

Overall Objectives

The INFLIBNET is designed to be a computer-communication network for linking libraries and information centres in universities and other institutions of higher learning including colleges, UGC Information Centres, and R & D institutions in the country. The main objectives can be summarized as follows :

(a) to evolve a national network, interconnecting various libraries and information centres in the country to improve their capability in information handling and services;

(b) to provide on-line access to document collection by creating on-line union catalogue, etc.

(c) to provide better access to worthwhile bibliographic information sources with citations and abstracts through indigenously created databases of the Sectoral Information Centres of NISSAT and UGC Information Centres and others by establishing access to international databases;

(d) to develop a system of document delivery service;

(e) to optimise information research utilization through shared cataloguing, resources sharing, etc;

(f) to introduce computerization of operations and services in libraries, by following a uniform standard;

(g) to facilitate scientific communication through electronic mail, computer conferencing, etc.;

(h) to develop required manpower; and

(i) to evolve standards and guidelines, for techniques, methods, procedures, hardware and software, etc. for facilitating the exchange and use of information.

The INFLIBNET proposed by the Working Group would greatly help the development of our library information network in the country hopefully during the next plan period, 1990-95.

Use of Information Technology in India

Though during the last two decades there have been several discussions and experiments in the country for the computer application to library and information activities, yet it is only during the past 4-5 years that this aspect has received somewhat serious attention of the library professionals and the concerned authorities. Availability of the low cost micro-computers has certainly served as a great incentive in this direction. Also, the training of manpower is another contributory factor in this regard. It is estimated that about 50 libraries and information centres in the country have by now introduced computers for their housekeeping jobs and/or services. Most of them, however, are special libraries. University and college libraries as well as public libraries unfortunately are still lagging behind in this respect. Some of the software packages in use are Computerised Documentation System/Integrated Set of Information Systems (CDS/ISIS) (microversion) developed by Unesco and Minicomputer Based Information System (MINISIS) by International Development Research Centre (IDRC), Canada. A few private Indian firms have also now started to develop software which are made available on commercial basis.

The Department of Electronics, Department of Telecommunications and others have either established or are in the process of establishing data communication networks in the country. Some of these are National Informatics Centre Network (NICNET) developed by the National Informatics Centre (NIC) for government information, and Integrated Information Management and Distributed Data Processing Facility (INDONET) by Computer Maintenance Corporation (CMC) for commercial use. There are possibilities of mounting bibliographical databases on these networks for providing online access to users.

Some of the more progressive library schools in the country have already been offering courses in this field for making available the required manpower. Special refresher courses are also being held occasionally at several places in the country.

Conclusion

Undoubtedly the prospects for developing information systems and services in the country are quite optimistic. Much, however, remains to be done. Some of the problems usually faced by the developing countries in this regard do exist in India as well. They may be identified as : lesser awareness in the value of information, disinterestedness in developing coordination and cooperation in resource building and exchange of information, financial constraints, poor communication linkages, non-availability of the required equipment, lack of the required dedication, motivation and even knowledge in the available manpower, and lack of standardization in methods and procedures, etc. □

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Education and Higher Order Skills

Rev. N. Pereira*

A very curious thing is happening in all parts of the world. Practically every nation is complaining of the fall in the standards of education and consequently it is in a process of re-examining the goals of education and ways and means of attaining them.

Recently, the USA appointed a committee on research in Mathematics, Science and Technology Education (1984-86). The Committee became interested in studying at a greater depth the following issues : (1) how the school environment can be manipulated to maximise opportunities for the school children to grasp better mathematics and science; (2) how children can learn to develop higher order skills. Lauren Resnick of the Learning Research and Development Centre of the University of Pittsburgh undertook the study of the second issue, which resulted in a report : *Education and Learning to Think*.

This report gives an idea of the problems that American education is facing and their assessment by different types of individualities. I refer to this Report because their way of thinking can also be a source of inspiration for us for we also face similar problems.

America is one of the greatest democracies of the world. Their traditions have survived, while other communist traditions appear doomed to be buried, an expression which was used long ago to indicate the supremacy of one of the two conflicting ideologies. And in a democracy, education has to spread horizontally so that all citizens effectively participate in the government, which is of the people, by the people and for the people.

While masses are being educated, it is quite likely that they may not find everything in the school or college tasty and relevant. How to make the educational programme interesting and productive, preserving at the same time the quality of education ? This is the problem.

On one side, democratic institutions of the country require that every citizen be educated to govern directly or indirectly the country, or to make democracy really a government of the people, by the people and for the people. On the other side, the socio-cultural and technological progress requires that men learn the "higher order skills."

What are these higher order skills ? There are many definitions, each one indicating the professional bent of those who defined. For philosophers, thinkers, and those who cultivate the mind, higher order skills are thinking and logical reasoning skills. Cognitive scientists will be inclined towards heuristics and ability to foresee and search. Educators will perhaps lay emphasis on artistic creativity and interpretive skill and so on. From all these definitions it is clear that higher order skills involve many aspects : general human behaviour, profession, community service, technological progress, etc.

Higher Order of Thinking

The American Report mentions that as regards schooling, higher order skill will be higher order of thinking and continues :

(1) Higher order thinking is non-algorithmic. That is, the path of action is not fully specified in advance.
(2) Higher order thinking tends to be complex. The total path is not visible (mentally speaking) from any single vantage point.
(3) Higher order thinking often yields multiple solutions, each with costs and benefits, rather than unique solutions.
(4) Higher order thinking involves nuanced judgement and interpretations.
(5) Higher order thinking involves the applications of multiple criteria which sometimes conflict with one another.
(6) Higher order thinking often involves uncertainty. Not every thing that bears on the task at hand is known.
(7) Higher order thinking involves self-regulation of the thinking process. We do not recognize higher order thinking in an individual when someone else manipulates him at every step.
(8) Higher order thinking involves imposing meaning, finding structure in apparent disorder.
(9) Higher order thinking is effortful. There is

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considerable mental work involved in the kinds of elaborations and judgements required.

This higher order thinking is to be developed in the school. But it can also be obtained by experience. This higher order thinking is necessary in the application and use of any skill, may be reading, talking, or any craftmanship.

I remember what Mrs. Lilian Carter had to say with regard to this higher order thinking. When she was in India as a member of the Peace Corps, her room was being fixed by an electrician. She gave him the instructions regarding the position of her study desk, bedroom, sofas, etc. and asked him to fix the lights. But he was asking her again and again where to fix the lights. She retorted that she had told him how the room was going to be used, now your commonsense must tell you how to fix the lights. Madam, the electrician replied, I did not learn any commonsense in the school, what I have learned is how to fix the lights. This is a typical case where higher order thinking is divested of one's professional education.

The school curriculum should therefore include thinking, problem solving and reasoning into the curriculum so that not a few, but all individuals can become competent with their commonsense well developed.

Everywhere today the employers complain that they cannot count on schools and colleges to produce young people who can move immediately into the tasks that are assigned to them. It makes a very sorrowful listening to such remarks about our school learning.

The Report discusses various items of learning, which have to impart higher order skills. There are first the three R's reading, writing, arithmatic to which another R, reasoning, is added. At the inception mass education was concerned with inculcating routine abilities : simple computation, reading and reciting religious or civic codes. Responding to changing economic and social conditions, education was required to develop higher order skills. Thus the secondary and post secondary education became mass education aiming at giving to the masses what the secondary education was giving formerly to the elite, in other words, the elite education was to be made available to all. The most important skill to be developed is reading and thinking.

Reading as Higher Order Skill

Reading is an art. There are two separate minds of the reader and writer working on the same text. The reader is not expected to see only the situation that the writer had in mind and the argument he tried to build. The comprehension of the reader has to go much beyond the mind of the writer with inferences being drawn and interpretations made throughout the passage. Or as we say, the reading has to be analytical and critical. For this purpose four kinds of knowledge are required : (1) linguistic knowledge or knowledge about the grammatical construction and meaning of the words; (2) the second is topical knowledge, i.e. knowledge of the subject dealt in the text; (3) Rules of inference and psychological perception of what is being said by writing or by omitting; (4) Knowledge of conventional rhetorical structures, i.e. poetry, novel, easy for the reader to get the truth and beauty conveyed by the writing.

Educators ought to develop among the students the ability to understand the written texts with little effort and the capacity to interpret and to extend the knowledge derived from reading. Cognitive theory suggests that these intellectual processes can be taught to all readers, including young children. Not to develop these processes is to ignore the most important aspects of reading. Together with reading, the art of thinking and reasoning makes another important higher order skill to be developed. There are certain subjects that facilitate the acquisition of this higher order skill. Mathematics and Logic are still considered to be the disciplines of the mind. Earlier, the teaching of Latin language was also considered to be a means of increasing the reasoning power, and for those who know this language this is undeniable. Most recently, computer programming has been proposed as a means to increase the skill of reasoning and problem solving.

Besides these two important skills, there are more higher order skills that have to be developed and can perfunctorily be mentioned in this paper : problem solving skill, self monitoring skill. All these skills are embedded in our personality and make an integrated ability to learn, to think and reason, which is so necessary, to acquire any type of professional skill. We have a good engineer and a bad engineer, a good artisan and a bad artisan, a good mechanic and a bad mechanic depending upon this integrated ability.

Assam Agricultural University and the Agricultural Scenario of the North East

"To bring greater relevance in agricultural education, it may be necessary to delete some of the outdated subjects from the course curricula and include newer fields like rural development, agricultural marketing, agro-industry, biotechnology, computer applications, educational technology etc. so that the students are better equipped to discharge their responsibilities in the fast changing and more demanding state scenario", said Dr. N.S. Randhawa, Director General of Indian Council of Agricultural Research and Secretary, Department of Agricultural Research and Education, Govt. of India while delivering the Convocation Address at the annual convocation of the Assam Agricultural University. Excerpts

Assam Agricultural University came into existence on 1st April, 1969 as a unique institution of its kind in the North-East India. In its initial stages of development, this university was fortunate to receive financial support from the IDA under its Education Project from June, 1973 till December, 1981. IDA's support of about Rs. 5.00 crores contributed considerably to infrastructure development and faculty upgradation in the formative years of this university. Subsequently, the ICAR has continued to help the university through liberal grants for instructional development and for strengthening the regional research capabilities, The continued support of the State Government in developing this university has been noteworthy. The State Government has earmarked a substantial amount during 1988-89 for the development of this university. Very few state governments provide such liberal assistance to their agricultural universities. It is commendable that Assam Agricultural University is contributing to the NEH states for scientific manpower development and it is fitting that for this purpose the North-East Council extends financial assistance to meet the additional expenditure in creating extra admission capacity. These efforts have made a significant impact in developing the various campuses at Jorhat, Khanapara, Vishwanath Chariali, Lakhimpur and Roha.

Convocation

Resident Instruction

The graduates trained by this university are presently engaged not only tn the improvement of the Agricultural scenario of the State of Assam, but also of the adjoining states of the North-Eastern Hill Region. It is a matter of pride that the university since its establishment has produced 4320 trained technical manpower in different fields of agricultural sciences.

Besides increasing the annual intake capacities of the existing colleges of agriculture and veterinary sciences, Assam Agricultural University has recently established the second college of agriculture at Vishwanath Chariali and a second veterinary college at Lakhimpur. The Indian Council of Agricultural Research has already given technical clearance to these colleges. I am happy to note the positive approach of the State Government in providing adequate funds to establish these colleges. The university should develop these colleges speedily in order to achieve the desired objectives.

The Council has supported the university through a developmental assistance of Rs. 183.30 lakhs during the 7th Plan. Looking to the wealth of natural forest resources in the State, the Council has also provided assistance of Rs. 66.00 lakhs to establish a department of forestry to offer Bachelor's degree in forestry science and has also deputed 3 scientists to USA for advanced training in forestry. These graduates would receive training in agroforestry with an accent on synergism and compatibility of various crop-tree systems for marginal and handicapped areas which have limitations for use in traditional agriculture. These gradutes will be better equipped in protecting the ecology of the State which is currently under severe stress due to growing pressure of human and livestock population. The Government of Assam may have to provide suitable job opportunities for these graduates.

The State of Assam has an immense potential for developing its fisheries resources. For providing trained manpower in fisheries, the proposal of the Assam

Agricultural University for establishing a college of fisheries at Roha with assistance from the State Government and the Council is a positive approach. The proposal from the university to establish a college of sericulture is also being examined in the Council for the feasibility and technical viability. I consider these to be steps in the right direction and congratulate the Vice-Chancellor for initiating them.

To bring greater relevance in agricultural education, it may be necessary to delete some of the outdated subjects from the course curricula and include newer fields like rural development, agricultural marketing, agro-industry, bio-technology, computer applications, educational technology etc. so that the students are better equipped to discharge their responsibilities in the fast changing and more demanding state scenario. For some time I have been noticing a dilution of the basic science component in the agricultural curricula; it may be appropriate to examine and make a conscious effort to strengthen it. The university may also consider starting short term courses for farmers, farm youth and rural women to impart training in skills relevant to the betterment of rural living conditions and improved agricultural technology.

THE AGRICULTURAL SCENARIO

Food Security Perspectives

The food and nutritional security perspectives have assumed considerable significance during recent years from the national, regional and state view points. If we study the foodgrain production trends during the eighties vis-a-vis the population growth, it will be clear that at the rate of 175 kgs. net availability of foodgrains per capita per annum, the conuntry requires a foodgrain production of 140 million tonnes to feed its present population of around 800 million. If we allow for the seed requirement, post-harvest losses and contribution to the national bufferstock, another 20% additional foodgrain production would be necessary. At a conservative estimate, therefore, the target for 1988-89 has been placed at 166 million tonnes and that for the terminal year of the 7th Plan it has been fixed at 177 million tonnes. The food production trends of the North-Eastern Hills Region including Assam indicate that this region has been contributing 2.35% to 2.74% of the national food production out of which the share of Assam has been ranging from 1.78 to 2.08%.

On a regional basis, assuming an estimated population of around 32 million for all the North-Eastern States, the food security demands a production of around 6.5 million tonnes, compared with the present (1987-88) production of 4.22 million tonnes, thereby leaving a deficit of around 2.0 million tonnes. It would, therefore, be necessary to accelerate our R & D efforts to provide adequate backup to raise the food production in the region.

Assam is fortunate to be endowed with rich natural resources, such as crops, forest vegetation, alluvial soils, water resources contributed by an abundant rainfall, livestock and wildlife, but their production levels are very low. The State also possesses rich mineral resources, e.g. coal, crude oil, limestone and sillaminite. It is a well known repository of wild germplasm of several plant species which have considerable value in breeding disease—and pest-resistant varieties of foodgrain and horticultural crops. The task before the university is to draw a comprehensive action plan not only to raise the production base of its natural resources but also to evolve a research and development strategy which will ensure ecological security and enable us to leave a better heritage for the posterity.

When we take stock of the present status of agriculture in the State, in relation to the natural resources and infrastructure, Assam accounts for 2.4% of the total area and 2.67% of the total population. The total cropped area is 3.55 m/ha with a net sown area of 2.69 m/ha which represent a cropping intensity of 132 per cent. The average size of holding is 1.36 ha. At present 15.4% of the cropped area is irrigated. The level of adoption of agricultural technology continues to be low chiefly because of poor infrastructural facilities, small size of holdings, subnormal extension effort, lack of rural credit facilities and poor communication facilities. Rice occupies 90%, pulses cover 4.7% and wheat around, 4.1% of the total area under foodgrains. The production levels of these crops were 1043 kg/ha. 419 kg/ha and 1050 kg/ha respectively in 1986-87 as compared to national averages of 1482 kg/ha, 508 kg/ha and 1998 kg/ha respectively. The yield of oilseeds was around 450 kg/ha. Special efforts are, therefore, needed to overcome all the constraints in realizing the potential of the natural endownments of the State.

Livestock Production

Assam and the North-Eastern Region has both temperate and tropical climate. For improved agricultural production, adequate energy is an essential input and for that cattle and buffalo males as well as Yak and Yak crosses pro-

vide the required draft power. In addition to cattle, buffaloes, sheep, goat, poultry and pigs, the region has two unique species of livestock, i.e. Yak and mithun. Yak is a multi-purpose animal and is used at higher attitudes as a pack animal in addition to milk, meat, draft and fuel. The whole region has very high demand for animal protein specially meat. Pig, and specially black pig is the preferred meat animal. In Assam, Bengal-type goat is most popular as meat animal.

The State has 6.7 million cattle, 0.56 million buffaloes producing 0.7 million tonnes of milk per annum. The increase in milk production from 1980 to 1984, for which firm figures are available, has been 11.3%. Milk yield per breedable female per year is only 390 kg. compared to the best average of 1752 in Punjab. Per capita milk availability is relatively low. Large scale programmes for cattle improvement through cross breeding with exotic dairy breeds have been undertaken in Assam. Programmes for improvement of meat production from pigs, goats and poultry have also been undertaken.

The region has one of the older veterinary Colleges which has served the needs for manpower training in the area of veterinary and animal sciences for whole of the North-Eastern Region. It has also made some significant contributions in research in the areas of animal production, specially related to identifying non-conventional feed resources and in animal health. Considering the importance of animal production, as a source of animal protein and for provision of energy for agriculture, it should receive increased research and development effort. The ICAR has been supporting the region in veterinary and animal science research programmes through the Assam Veterinary College as well as the North-Eastern Agricultural Research Complex. The establishment of National Research Centres on Yak and Mithun by the ICAR will strengthen the research capability in the region for conservation of these species and improving their productivity. There is also a long-standing demand by the region to set up a National Research Centre on Pigs, which we are contemplating to establish during the 8th Plan. The region has a number of breeds of pigs starting from pigmy to large sized which need to be thoroughly studied and steps for their conservation and management taken. Similarly, swamp buffaloes are available in the region and need to be studied for their improvement for draft, meat and milk.

The State has started another College of Veterinary and Animal Sciences and considering the total need of manpower in Assam and the North-Eastern Region, the two colleges in Assam can play an important role in manpower development. There is a need for further strengthening of the research and development programmes in the area of livestock health and production and for that there will be greater demand for trained manpower at the postgraduate level : Assam Agricultural University should immediately consider strengthening of these programmes in the form of faculty upgradation and adequately equipped laboratories and clinics. Since distances in the region are larger and the terrain is difficult, the transport of products becomes difficult. It is necessary that suitable processing technologies are developed which will reduce bulk, add value and improve the shelf-life so that transportation costs are reduced and the products could be taken to distant places.

Fisheries Development

Assam is well endowed with Inland Fishery resources comprising both culture and capture fisheries. The river system in the State supports the unique Bheels of about one lakh hectares in area which produce almost 80% of the fish in the State. The State has 8000 hectares of pond systems which are being brought under scientific aquaculture.

With the ICAR technology, the State has achieved a fish productivity of 1000 kg/ha/yr. as against the national average of 1500 kg/ha/yr. during the current year. During 1987-88 about 58,000 tonnes of fish was produced as against 50,000 tonnes during the preceding year. The 7th Plan target for fish production in the State is 79,000 tonnes. Similarly, in the fish seed sector, the State has acquired the technology of induced breeding, which has enabled the State to achieve a production of 56 million fish seed and is targeted at 86 million by the end of the 7th Plan.

Nevertheless, it is my firm opinion that the available water resources in Assam are not being put to adequate exploitation. I would suggest that deliberate efforts may be made through legislation or through executive orders towards protection and conservation of the fish fauna in Brahmaputra by preventing large scale killing of juvenile fish, and full utilization of ponds and tanks for fish culture, duly supported by an efficient collection and marketing mechanism. A large num- of water bodies in Assam are ideally suitable for cultivation of aquatic cash crops such as Singhara (Trappa bispinosa) and

Makhana (Euryale ferox). The improved technologies of these cropping systems from North Bihar with adequate location specific adjustments could bring about a measurable change in the economic status of the rural communities. The development of fisheries in the Bheels through the proposed project under World Food Programme (WFP) is based on total technical support from the ICAR Fishery Institute. I believe the people of Assam must be eagerly awaiting the results of this project.

The Assam Agricultural University has received the support of the ICAR in the establishment of the Fisheries College. This College should not only be equipped to provide resident instruction but should also serve as a nucleus for quality research in the fishery sector. For ensuring an adequate feedback on field problems and expeditious adoption of proven technologies, there should be a provision of an extension education wing in the college. The expertise of the fisheries college should add to the efforts of the State Government in improving the functioning of Fish Seed Farms and in bringing a major part of the 8000 hactares of ponds and tanks under scientific fish farming presently being strengthened through Fish Farmers Development Agencies in 12 districts of Assam.

The fishery sector in Assam must become relevant to the national scene and assure a sizeable contribution to the national target of 2 million tonnes from Inland Fishery Resources. I am sure that the university will make it possible by raising a cadre of trained personnel in fisheries with the right perspective to serve the State.

ICAR-Supported Research Infrastructure

ICAR's infrastructure in Assam and the North-Eastern Region comprise the NEH research complex located at Shillong with regional centres in the 7 NEH States, the national research centres for Mithun and Yak in Nagaland and Arunachal Pradesh, respectively, the JARI Research Station at Serbhog, CPCRI Regional Station at Kahikuchi, NBSS & LUP Regional Centre at Jorhat and the CICFRI Centre at Guwahati in Assam. In addition 55 centres of All India Coordinated Research Projects are located in tbe region. Of these about 40 are in Assam. In order to strengthen the regional research capability in Assam, six Zonal Research Centres have already been established under the National Agricultural Research Project of the ICAR.

In addition to ICAR's infrastructure the Assam Agricultural University has its own research stations and experimental farms located in the various districts of the State. The university can provide the leadership in strengthening the inter-institutional linkages which will help achieve better services from the limited research infrastructure in the region.

Farming Research System

The NEH Research Complex of the ICAR located at Bara Pani (Meghalaya) has established several farming system models involving crop culture, livestock farming, horticulture, silviculture and fisheries. These integrated models have great relevance to the two hill districts of Assam. Their aim is not only improved productivity, but also long-term sustainability of the land resources. I would like to compliment our scientists for their innovative researches which are compatible with the environment and provide ecological security. Concerted efforts are necessary to popularize these conservation-oriented models by linking them with a large-scale pilot project under field conditions. Effective implementation of these models will demand not only coordination among several line departments but also intimate people's participation both at the planning stage and during the course of implementation. For each eco-situation we will have to organize resource development and management societies which ultimately can take up the responsibility of the replication of these programmes. Simultaneously we should be promoting traditional soil conservation measures such as contour bunds, bench terraces, water harvesting ponds and grassed waterways which will also help in checking the soil losses.

It is highly desirable that the students are increasingly involved in the planning, development and implementation of these farming system programmes. This will improve the capability of the students in integrating their isolated experiences acquired under different disciplines of agriculture. Students can be linked with these programmes though ongoing activities like, NSS, PFT, etc.

Management of Problem Soils

Floods represent the most common natural recurring calamity causing devastation to life, property and standing crops in Assam. The mighty rivers Brahmaputra and Barak with large number of tributaries account for several waves of floods every year. During 1988 an area of about 52.00 lakh/ha. was affected by worst floods ever experienced, causing a damage of around

Rs. 800 crores. This challenge has to be accepted by agricultural scientists by evolving suitable varieties of crops which will fit in such situations. It is also possible to grow short-term pulse and oil-seed crops on the residual moisture after the recession of floods. Agricultural scientists have to evolve suitable cropping patterns incorporating varieties which can be accommodated within the restricted crop growth period situations commonly encountered in Assam.

Some of the other soil based constraints such as acidity, iron toxicity can only be corrected by repeat application of amendments which are present as mineral resources. Long term solutions can be provided by developing varieties tolerant to such abiotic stresses.

Diversification of Agriculture

The State of Assam accounts for 54% of the output of tea and roughly 20-25% of the total production of jute in the country. Both these crops are important for improving the socio-economic conditions of Assam farmers. I am told that the Assam Agricultural University has established a department of Tea Husbandry with a mini processing unit. This unique unit is doing a commendable job in producing trained manpower in the area of tea husbandry. The Council would be happy to strengthen this unit in the 8th Plan. I feel that such units should also be established at Cooch-Behar campus of Bidhan Chandra Krishi Vishwavidyalaya (BCKVV) (West Bengal) and at Himachal Pradesh Krishi Vishwa-Vidyalaya (HPKVV), Palampur (Himachal Pradesh), where tea crop is grown in large areas under the guidance of the university.

This region produces some of the finest varieties of oranges and pineapples and also possesses the potentiality of growing wide range of temperate fruits and vegetables. Looking to this background the Assam Agricultural University can play a unique role in diversification of agriculture in the N.E. India. The production of pine-apple, orange and banana in Assam can be considerably improved from the present level of 34000, 17000 and 250000 tonnes respectively. □

KARNATAK UNIVERSITY, DHARWAD

SOME OF OUR PUBLICATIONS

1.	The Socio Economic Transformation of India : Dr. Ambedkar's Vision.	**Ed. A.M. Rajasekhariah**	15-00
2.	Dr. B.R. Ambedkar and Popular Sovereignty	**A. Varadarajan**	04-00
3.	Religion and Social Determinism and Justice	**Cheddi Lal**	06-50
4.	Dr. Pavate Educational Administration : Then and Now	**V.S. Jha**	02-50
5.	Education and Labour Market	**Malcolm Adiseshiah**	05-00
6.	Legal theory and Social change : The Indian Scene	**O. Channappa Reddy**	05-00
7.	Social Justice : The Crisis of Hypocracy	**V.R. Krishna Iyer**	04-00
8.	Women Freedom Fighters in Karnataka	**Sarojini Shintri and K. Raghvendra Rao**	16-0
9.	National Unity, Equality, Rule of Law and Creating Men of Quality	**M. Rama Jois**	09-00
10.	Decentralisation of Education	**M. V. Kamath**	
11.	New Trends in Sanskrit Poetics	**B. P. Bhattacharya**	09-00
12.	Vakrokti Jivita	**Ed. K. Krishnamurthy**	40-00
13.	Symposium on Planned Economic Development and the Developmental Programme for Weaker Sections in Karnataka	**Ed. A. M. Rajasekhariah**	44-00
14.	Akkamahadevi Ke Vachan (Hindi Translation)	**Nandini Gundu Rao**	18-00

For copies, please write to :

DIRECTOR,
Prasaranga, Karnatak University,
Dharwad-580003 (Karnataka State)

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be Contacted
Oct. 13-15, 1989	National Symposium on Environmental Management Strategies for Pathogenesis in Parasitic Diseases	To discuss economic significance of parasitic diseases in fish, biological control of pathogens and environmental interactions, disease prediction hypothesis & management of transmission dynamics	Department of Zoology, University of Allahabad, Allahabad	Dr. Sandeep K. Malhotra Convenor, Post-Box No. 2010, Parasitology Laboratory Department of Zoology University of Allahabad Allahabad
Oct. 16-18, 1989	Fourth Annual National Convention of Indian Association of Physics Teachers (IAPT)	To discuss Physics Teaching at the Undergraduate level	Govt. Science College, Raipur (M.P.)	Shri M.G. Tarnekar, Convener C/o Department of Physics, Govt. Science College, Raipur-492010.
Oct 20-22, 1989	National Symposium on Dynamism in Chemical Reaction	Proposed topics include Energetics, Dynamics and Reaction Kinetics; Catalysis; and Chemical Monitoring of Environment Pollutants	Atarra Postgraduate College, Atarra, Banda (U.P.)	Dr. R.K. Shukla Head, Department of Chemistry. Atarra P.G. College Atarra, Banda (U.P.) 210201
Oct. 27-28, 1989	All India Seminar on Construction Management	Proposed topics include construction materials, construction techniques, Work site organisation, Safety Engg. and Role of Computer in Construction Management	Civil Engineering Department, Thapar Institute of Engineering & Technology, Patiala	Dr. C.B. Kukreja, Prof. & Coordinator, All India Seminar on Construction Management, Deptt. of Civil Engineering, Thapar Instt. of Engg. & Tech., Patiala-147001 (Punjab)
Dec. 4-7, 1989	International Conference of Engineering Software	To deliberate on the recent advances in the software development and associated computational methods for specific engineering applications	Indian Institute of Technology, Delhi	Prof. C.V Ramakrishnan, Head, Deptt. of App. Mech. IIT, Delhi, Hauz Khas, New Delhi-110016
Dec. 13-15, 1989	13th National Systems Conference—1989	To bring out the various systems methodologies as applied to Engineering, Industrial Economics, and social problems.	Department of Electrical Engineering, IIT, Kharagpur	Prof. M.K. Ghosh, Department of Electrical Engineering, Indian Institute of Technology, Kharagpur-721302
December 30-31, 1989	9th State level Academic Conference of Maharashtra Federation of College Library Associations	To discuss the theme "Modern Trends in Library and Readers	Maharashtra Federation of College Library Associations, Akola.	Mrs. Nirmal Hulbe, Librarian & Convener Ahmednagar College, Ahmednagar.

MIL Introduces Language Diplomas

The Manipal Institute of Languages (MIL), Udupi, proposes to start a one year post-graduate diploma in English and Kannada from 1989-90 academic year. According to Dr. Sukumar Gowda, Director of the MIL, the courses are programmed to improve the language competence of teachers, graduates or anyone who wishes to improve his language competence.

The objectives of these courses, Dr. Gowda said, are to develop insights into the problems of languages teaching and learning, improve their competence in language in its use and usage and develop their knowledge of literature in its different forms and facets.

Criterion for admission to the course is that the candidate should be a graduate and should have studied these two languages for two years. Both the languages have two parts, namely, compulsory and optional, carrying a total of 500 marks.

Haryana Enacts Library Legislation

Haryana has become the first state in the northern India to have a legislation on public libraries. This was revealed by Mrs. Sushma Swaraj, Education Minister, Haryana in Chandigarh recently. According to her, the Haryana Public Libraries Bill, 1989 recently passed by the Vidhan Sabha provides for the establishment, maintenance and development of public libraries in the state. She further said that the bill is primarily meant to provide for a comprehensive rural and urban library service in the state; to establish a network of libraries on statutory basis; and to ensure stable financial support on a progressive basis. The bill also seeks to set up a library authority which would be responsible for the staffing, administration and management of libraries.

Stat-Math Workshop

The Stat-Math Division of the Indian Statistical Institute proposes to conduct a workshop on 'Vector Measures and Geometry of tensor product spaces' at their Bangalore Centre from 18th December, 1989 to 4th January, 1990. Intended primarily for research-scholars and faculty, working in Functional Analysis and Probability theory, the workshop will cover, starting at an elementary level, some of the recent results in the tensor product theory and Banach space valued probability theory.

Further details with regard to participation, etc. may be had from Mr. T.S.S.R.K. Rao, Indian Statistical Institute, R.V. College Post, Bangalore-560 059

Refresher Course on Maintenance Management

The Thapar Institute of Engineering and Technology proposes to conduct a Refresher Course on Maintenance Management during Oct/Nov., 1989. The basic aim of the course is to highlight the importance of maintenance management in Production/Service System and to expose the participants to the diverse dimensions of the problem following a systems approach. Further details can be had from Prof. P.L. Bali, Deptt. of Mechanical & Industrial Engineering, TIET, Patiala-147001.

Kurukshetra ASC's Orientation Course

The Academic Staff College of the Kurukshetra Universitv organised an Orientation Course for the newly appointed University and Colleges lecturers from 7th August to 2nd September, 1989. Eighteen participants from the disciplines of English, Hindi, Education, Economics, History, Political Science, Marketing, Psychology, Philosophy and Library Science attended. The course components included Awareness of Linkages among Society; Environment and Education; Philosophy of Education, Indian Education System and Pedagogy; Management and Personality Development; Personality Development of the Teachers; and Monitoring and Evaluation.

Prof. C.L. Kundu, Director of the Academic Staff College, who inaugurated the course, explained the salient features of the scheme and said that the basic purpose for the establishment of the Academic Staff College in the universities was to improve the status of the teachers. He observed that though the teachers were excellent in the subjects of their teaching, but majority of them lacked knowledge and perception about other subjects. Such courses, he said, would provide them an opportunity to gauge into other disciplines and help them adopt interdisciplinary approach in their teaching. Prof. Kundu described Lord Buddha as a great teacher and adult educator and exhorted the participants to emulate him.

During the course, lecture-cum-demonstrations were organised and the participants evinced keen interest in the subjects other than of their own discipline. Panel discussions and educational tours were also arranged to inculcate among

the participants the new concept of teaching so as to enable them to make the classroom teaching more interesting and stimulating.

PG Course in Bank Management

The Department of Bank Management of the Alagappa University has introduced a postgraduate course in Bank Management (MBM) from the current academic session. Inaugurating the course, Dr.(Mrs) Radha Thiagarajan, Vice-Chancellor, said that Alagappa is the only university in the whole of India offering a postgraduate programme in Bank Management and a research programme leading to M.Phil degree. She said that the syllabus for the course is formulated on the basis of the guidelines given by the most successful bankers of the nation and the compulsory practical training for three months is the special feature of the course. She also suggested that the department has to pave way for interactions with practical bankers to make the course a practical one.

Industry-Institute Interaction Cell

The Ministry of Human Resource Development, Govt. of India, has sanctioned a grant of Rs. 8.8 lakh for setting up an Industry-Institute interaction Cell at Thapar Institute of Engineering and Technology, Patiala. This is one of the five institutions in the country selected for the purpose and is in recognition of the work done by the Institute in the field of Industry-Institute Interaction.

News from Agril. Varsities

Kisan Mela at PAU

The Punjab Agricultural University (PAU) recently organised a one-day Kisan Mela to acquaint the farmers with the latest research of the PAU in respect of coming rabi crops, vegetables, fruits, pulses and oilseeds. Inaugurating the mela Mr. A.S. Pooni, Financial Commissioner (Punjab) said that the farmers should modernise their agriculture according to the international standard. He urged the farmers to adopt new crop rotations and grow such crops which could be profitable for them. He further said that since the agriculture had become an industry the farmers should pay more attention to the cultivation of crops like vegetables, fruits, oilseeds, pulses, cotton and sugarcane. He asserted that while the cost of various farm inputs like fertilizers, insecticides and weedicides had tremendously increased, the income of the farmers has increased marginally. He said that Rupees 1.9 crore had been earmarked during the current season to improve the crop productivity of Hoshiarpur, Amritsar and Bathinda districts. This amount will be given to the farmers in the shape of subsidy on seeds, fertilizers, insecticides and weedicides.

Dr. Sukhdev Singh, Vice-Chancellor of the PAU said that since the cost of various farm inputs have considerably increased, these should be used according to the recommendations of the PAU. It would help reduce the cost of production. The Vice-Chancellor exhorted the farmers to learn new techniques in respect of the cultivation of rabi crops.

Dr. Khem Singh Gill, Director of Extension Education of the PAU said that the PAU had evolved a matching technology to remove the variation of crop yield in various districts of the State.

Over 20,000 farmers from all parts of Punjab attended the mela.

New Wheat Varieties

The scientists at the Institute of Agricultural Sciences of B.H.U. have developed two wheat varieties, namely, HUW-318 for Southern Hills Zones of India and HUW-251 for whole Tarai belt of Nepal possessing high yield and resistance to important wheat diseases.

HUW-318 wheat variety, recently released by All India Wheat Research Workers Workshop is a double dwarf wheat variety and has given maximum yield upto 58.0 qtls/ha. This is an ideal variety for restricted irrigations and medium fertility levels.

HUW-251 has been recently released by Nepal Government for whole Tarai belt of Nepal in the name of Nepal Wheat-251 for general cultivation on the basis of its outstanding performance. This is a double dwarf wheat variety with profuse tillering and gives high yield even under medium fertility condition.

The Call of Hockey

The poem with this title that appeared in our issue of 25 September 1989 is authored by Shri B. S. Grewal, Programme Coordinator, Punjabi University. The omission of the byline in the said issue is regretted.

News from UGC

INSAT 1-B Programme of UGC

Between 20th October to 31st October, 1989 the following schedule of telecast on higher education through INSAT 1-B under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 12.45 p.m. to 1.45 p.m. and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

12.45 p.m. to 1.45 p.m.

20.10.89

"Vedic Mathematics—V"
"International Politics : India's Responses"
"A Talk With Dr. J.C. Kothari"

21.10.89

"Burns"
"Berlin—Cultural City of Europe"

22.10.89

No Telecast

23.10.89

"Surface Tension"
"Inflation"
"Tuffy the Sea Teacher"

24.10.89

"The Basics : Understanding Self and Others"
"Panchakarma—2 : Pradhan-karma"

25.10 89

"The New Engineers"
"Environmental Mutpgenesis : Is Our Tomorrow Safe"

26.10.89

"Pulse Circuits—III"
"Noise Pollution"
"'GOGOL' of the Bitter Laughter"

27.10.89

"Vedic Mathematics—VI"
"Ghosts, Gods and the Human Mind"
"A Talk With Prof. W.R. Lee and Prof. Wongphanich"

28.10.89

"Time Past Time Present"
"Microminiatures of Armenian SSR"
"In the Service of Man"

29.10.89

No Telecast

30.10.89

"In a Laser Beam"
"Career Guidance : Business Management"
"The Time Has Come—I"

31.10.89

"The Basics : Basic Needs Assessment"
"University Round Up"

2nd Transmission

4.00 p.m. to 5.00 p.m.

20.10.89

"Cosmic Sparklers"
"Harvest"
"Threatened Eco-systems in India"

21.10.89

"Zibo Ceramic Ware"
"Modern Art"
"Music of North India—Amjad Ali Khan"

22.10.89

No Telecast

23.10.89

"The Beauty, The Beast and the Sir—II"
"Save Your Grain From Insects—I"

24.10.89

"The Basics : Effective Writing Skills"
"Ayurveda Series—II : Herbal Wealth of Gujarat"

25.10.89

"Off-shore Structural Engineering"
"Salarjung Museum"
"Microbiology of Milk—II"

26.10.89

"Filters"
"Mining : Industrial Minerals for All"
"The Language of Science"

27.10.89

"Vedic Mathematics—III"
"Political System in India"
"Arid Zone Ecology Phase—I Solar Fnergy Appliances"

28.10.89

"Home of Porcelain in South China"
"Alcatraz"
"Music of North India : Bhimsen Joshi"

29.10.88

No Telecast

30.10.89

"The Beauty, The Beast and the Sir—III"

"Save Your Grain From Rodents—II"

31.10.89

"The Basics : Questioning Skills"

"Ayurveda Series—III : From Forest to Pharmacy-Medicinal Rlants"

"Head Injury"

Planning Forums in Educational Institutions

Under a revised scheme of the University Grants Commission, universities and colleges will organize Planning Forums through their departments of Economics or other social science departments. While academic support will be provided by these departments for the successful functioning of the Planning Forums, the Commission will extend financial assistance to the tune of Rs.10,000/- annually to the universities and colleges for the setting up of the forums on 100 per cent basis for a period of five years for the purchase of materials, xeroxing, preparation of maps and charts, typing, hiring of film stips, and travel expenses. The funds would be made available on year to year basis in the light of the progress of work. The Planning Commission will enlist each Planning Forum for supply of its organ 'Yojana'. In addition, the State Planning Departments will supply literature on State plans.

The scheme of Planning Forum aims to create an awareness of need for planned development of the country among the student and teaching community. To acquaint them with planning at grassroot level, the forums will work in close collaboration with the developmental mechinery at district and block levels. They will also create agencies for developing plan consciousness among the educated youth in particular and through them among the general public through intensive intellectual debate on strategies and programmes of plans at national, state and district levels.

Each Planning Forum is expected to work as a respository of all plan literature, slides, film strips, etc. brought out from time to time by the various departments of Central as well as State Governments. It will also serve as a plan information centre in the area.

Restructuring the UGC

The University Grants Commission has invited the Administrative Staff College of India (ASCI), Hyderabad to make an in-depth study of its functioning. The project covers restructuring of the UGC secretariat in relation to such areas as academic improvement, grant administration, new schemes, interface with universities and colleges, etc.

The ASCI team is visiting some of the colleges and universities to elicit their views on these issues. As it is not possible to visit all the universities and colleges, the ASCI will welcome institutions to write to it their views on restructuring the UGC. Communications may be addressed to : Prof. B.R. Virmani, PM & IR Area, Administrative Staff College of India, Bella Vista, Hyderabad 500 049.

The project is scheduled for completion in early 1990. The views may therefore be sent to ASCI before December 1989.

Fellowships for SC/ST Teachers

The University Grants Commission, on the recommendations of an Expert Committee, has awarded 50 Teacher Fellowships during the year 1989-90 for doing M.Phil/Ph.D. to scheduled caste and scheduled tribe teachers.

50 teacher fellowships have been instituted to provide additional opportunities to teachers belonging to scheduled caste and scheduled tribe communities working in affiliated colleges to improve their qualifications. The duration of short term fellowship for pursuing M. Phil course is one year. The normal duration of the long-term teacher fellowship leading to Ph.D. degree is three years, including M. Phil wherever provided.

ASSOCIATION OF INDIAN UNIVERSITIES

AIU HOUSE, 16 KOTLA MARG, NEW DELHI-110002

Applications are invited from Indian citizens for the Post of an Assistant, against leave vacancy initially for one year, in the prescribed form available on payment of Rs. 2/- from the Office of the Association. **Qualification** : Bachelor's degree. **Experience** : At least five years as UDC in Educational Institution/Govt. Autonomous Organisation with experience in noting, drafting and knowledge of Govt. rules, etc. Knowledge of typewriting and proficiency in organising cultural activities will be considered as additional qualifications. SC/ST/Ex-servicemen will be given preference. Appointment on deputation terms may also be considered. **Pay Scale** : Rs. 1400-2600. Total emoluments at minimum are Rs. 2381 p.m.

Applications complete in all respects should reach the Office by 26th October, 1981. Applications received after the last date or without complete information will not be entertained.

AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month', while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research Scholars and students of education are welcome to use these resources. The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

RESEARCH IN PROGRESS

A List of Research Scholars Registered for Doctoral Degrees of Indian Universities

SOCIAL SCIENCES

Psychology

1. Baljit Singh. *A study of the dimensions of power motivation and the associated background variables.* Panjab, Dr. J.M. Jerath, Department of Psychology, Panjab University, Chandigarh.

2. Brar, Geetinder. *Developmental trends in achievement, affiliation and power-motive among males and females with different sex-role identities.* Panjab. Dr. J M. Jerath, Department of Psychology. Panjab Unlversity, Chandigarh,

3. Gautama, Rajni. *Personality correlates of attitudes of Haryana Treasury employees towards the introduction of a saving bank system* Panjab. Dr. (Mrs.) P. Vasudeva, Department of Psychology, Panjab University, Chandigarh.

4. Nainian, Mohammed Reza. *Psycho-neurological assessment epilepsy.* BHU. Dr. P.B. Behere, Department of Psychiatry, Banaras Hindu University, Varanasi.

5. Verma, Saloni. *Gender differences in depression : A study of correlates at different levels of stressful life events.* Panjab. Dr. V.V. Upmanyu, Department of Psychology, Panjab University, Chandigarh.

Economics

1. Dahiya, Prem Singh. *Economics of potato production in Himachal Pradesh.* HP. Dr. J.P. Bhati, Department of Economics, Himachal Pradesh Universlty, Shimla.

2. Jagdish Chand. *Variations in employment and expenditure of farming households in different agro-climatic regions of Himachal Pradesh.* HP. Dr. J.P. Bhati, Department of Economics, Himachal Pradesh University, Shimla.

3. Karol, Sanju. *Impact of Integrated Rural Development Programme on women : A case study of Mashobra Block Himachal Pradesh.* HP. Dr. L R. Sharma, Department of Economics, Himachal Pradesh University, Shimla.

4. Onkar Singh. *Energy consumption in the household sector with special reference to Shimla City and its neighbourhood.* HP. Dr. A.S. Guleria, Department of Economics, Himachal Pradesh University, Shimla.

5. Patel, Kanta. *Computerisation in Life Insurance Corporation of India.* Devi Ahilya. Dr. S.S. Pawar, Coordinator, Minority Cell, Devi Ahilya Vishwavidyalaya, Indore.

6. Soraswat, Satya Prakesh. *Hill economy in transition : A case study of Kot village in Himachal Pradesh.* HP. Dr. J.P. Bhati, Department of Economics, Himachal Pradesh University, Shimla.

7. Utreja, Yamini. *A study of farm production patterns in the peripherv of Shimla City.* HP. Dr. A. Guleria, Department of Economics, Himchal Pradesh University, Shimla.

8. Vaidya, Chander Shekhar. *Resource use efficiency in field crop production across farm size categories in different agro-climatic zones in Himachal Pradesh.* HP. Dr. B.K. Sikka, Department of AERC, Himachal Pradesh University, Shimla.

Law

1. Bijikumary Amma, A. *Permissible restriction on freedom of expression through visual media.* Kerala. Dr. N.K. Jayakumar, Department of Law, University of Kerala, Trivandrum.

Education

1. Bal, Gurinderjit K. *The effectiveness of audio-visual instructions in terms of students attitudes towards mode of instruction and acquisition of concepts in relation to cognitive style at Piagetian concrete and formal operation stages.* Panjab. Dr. G.S. Sodhi, Reader, Department of Education, Panjab University, Chandigarh.

2. Bal, Nimret. *The efficacy of guided discovery and expository teaching strategies on acquisition, retention and transfer of writing skills in English among students at the +2 stage in relation to intelligence and cognitive style.* Panjab. Prof. (Miss) S. Gakhar, Department of Education, Panjab University, Chandigarh.

3. Baljit Kaur. *Correlates of achievement in Biology : A comparative study of urban and rural senior secondary students of Panjab.* Panjab. Dr. S.C. Gakhar, D.A.V. College of Education, Abohar.

4. Batra, Neelam. *Conjunctive concept formation in relation to intelligence, socio-economic status and achievement at the secondary stage.* Panjab. Dr. Harish Sharma, Department of Education, Panjab University, Chandigarh.

5. Chawla, Romilla. *Socio-psychological correlates of modernity; Its implications for the enrichment of intellectual climate of Panjab University.* Panjab. Prof. (Miss) S. Gakhar, Department of Education, Panjab University, Chandigarh.

6. Dawarka. *Selected physical physiological and motor skill determinants of performance in female inter-college level volleyball players of Himachal State.* Panjab. Dr. S.N. Sharma, Department of Physical Education, Panjab University, Chandigarh.

7. Dhillon, Agness. *Educational philosophy af Dev Atma and its relevance to education in modern India.* Panjab. Dr. S.P. Gupta, Dev Samaj College of Education for Women, Ferozepur,

8. Gobind Lal. *Evaluating of course design for pre-scholars in terms of cognitive, psychomotor and social development.* Panjab. Dr. G.S. Sodhi, Department of Education, Panjab University, Chandigarh.

9. Joshi, Jagdish Kumar. *Indore Jile ke shaikshik itihas kee shodh prayojna ke antargat prathmik shiksha mein sankhyatmak, gunatmak istri thatha pichare varg ka adhyayan.* Devi Ahilya. Dr. U.S. Choudhary, School of Education, Devi Ahilya Vishwavidyalaya, Indore.

10. Khanna, Anita. *Developing instructional strategies for creating awareness about environmental pollution in the State of Panjab.* Panjab. Dr. S.P. Gupta, Dev Samaj College of Education for Women, Ferozepur.

11. Manjeet Kaur. *Vocational choices of high school students of Chandigarh as related to personality traits, achievement motivation, occupational information and parental involvement.* Panjab. Dr. (Mrs.) Asha Mohan, Department of Education, Panjab University, Chandigarh.

12. Meena Kumari. *An evaluative study of the teaching of Mathematics in elementary and secondary schools in Panjab with special reference to its objectives.* Panjab. Dr. S.C. Gakhar, D.A.V. College of Education, Abohar.

13. Meenakshi Rani. *Vedantic model of an ideal educated man with special reference to Swami Rama Tirtha's educational philosophy.* Panjab. Dr. S.S. Mathur, Departmedt of Education, Panjab University, Chandigarh.

14. Napapongs, Wichai. *The effectiveness of video cassettes in an educational technology course for undergraduate student-teachers of engineering technology.* Panjab. Dr. Anand Bhushan, Department of Education, Panjab University Chandigarh.

15. Ngamprakhon, Phra Sin, *An evaluation of curriculum for non-formal functional education programmes (Level 4-5) in Thailand.* Panjab. Dr. Anand Bhushan, Department of Education, Panjab University, Chandigarh.

16. Setia, Seema. *Socio-psychological and educational factors of differential learning rate in modern Mathematics at the senior secondary stage.* Panjab. Dr. S.C. Gakhar, D.A.V. College of Education, Abohar.

17. Toong, Rajinder. *Impact of court decisions on educational policies and teacher morale in Panjab.* Panjab. Dr. S P. Gupta, Dev Samaj College of Education for Women, Ferozepur.

18. Walia, Naveen Kaur. *Counselling needs of students at the +3 stage in relation to personality characteristics, academic achievement and family background.* Panjab. Dr. (Mrs.) Pusbpa Chaudhary, Department of Education, Panjab University, Chandigarh.

19. Yadav, Sushila. *Selected personality variables, adjustment and socio-economic status as related to performance in mass and class sports.* Panjab. Shri Gurbakhsh Singh Sandhu, Department of Physical Education, Panjab University, Chandigarh.

Commerce

1. Goyal, R.K. *A study of sickness in small scale industries in Malwa Region.* Devi Ahilya. Dr. D.P. Mishra, Principal, Shri Vaishnav College of Commerce, Indore.

Management

1. Kurien, K.V. *Progress of S & T in Kerala during the last one decade and more : A critical study with reference to the role of technology transfer through R & D Planning and Management in agriculture and allied sectors.* Kerala. Prof. S. Chidambara Iyer, Prof, Institute of Management in Government, Vikas Bhavan P.O., Trivandrum.

HUMANITIES

Philosophy

1. Minoo, Jal Murzban. *Fetishism : A study of the concept in Marx with special reference to Marx's capital.* Panjab. Prof. Bhuvan Chandel, Department of Philosophy, Panjab University, Chandigarh.

2. Raj Bala. *Concept of justice : An ethico-juridical analysis.* Panjab. Prof. Bhuvan Chandel, Department of Philosophy, Panjab University, Chandigarh.

3. Watanabe, Shinji. *A critical study of Abhidharm Kosa.* BHU. Dr. A.K. Rai, Department of Philosophy, Banaras Hindu University, Varanasi.

Language & Literature

1. Muharem. *To investigate the analysis of transformational generative grammer to syntectic ambiguity of positive sentence of Sehas ond Indonesis.* BHU. Prof. S.S. Misra, Department of Linguistics, Banaras Hindu University, Varanasi.

English

1. Alka Pushpa Nisha. *Thematic study of the short stories of Mark Twain.* HS Gour. Dr. (Mrs.) Urmila Verma, Reader, Department of English, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

2. Devinder Prashad. *The search for salvation in the modern English novel : A critical analyses of the dionysian mysticism in the fictional writings of Aldous Huxley, L.H. Myers and D.H. Lawrence.* Panjab. Dr. M.S. Bhatia, Govt. College, Ludhiana.

3. Hardayal Manmeet. *Religion and class consciousness in Evelyn Waugh's fiction.* Panjab. Dr. Sheeley Walia, Reader, Department of English, Panjab University, Chandigarh.

4. Kapur, Puja. *The novels of Kurt Vonnegut, Jr. : A study of his comic vision.* Panjab. Dr. (Mrs.) Lovelina Singh, Lecturer, Department of English, Panjab University, Chandigarh.

5. Madhurima. *Quest for roots in the poetry af N-Ezekiel, Kamala Das, A.K. Ramanujan, Parthasarathy and Jayant Mahapatra.* Panjab. Prof, (Mrs,) Nirmal Mukerji, Department of English, Panjab University, Chandigarh.

6. Ravil Kamal. *Dramaturgical strategies in Cheknov's major plays : A textual study.* Panjab. Dr.C.L. Ahuja, Reader, Department of English, Panjab University, Chandigarh.

7. Wig, Krishan Kumar. *Tradition and modernity in the plays of Wolf Soyinka.* Panjab. Dr. Pushpinder Syal, Reader, Department of English, Panjab University, Chandigarh.

Sanskrit

1. Azad, Sita Ram. *Kullu kee lokkathaon ka pauranik udgam.* Panjab. Dr. Anirudh Joshi, Department of Sanskrit, Panjab University, Chandigarh.

2. Lalta Prasad. *Patanjal yog parampara ke, sandarbh mein yogantroy evam samadhan : Ek adhyayan.* Panjab. Dr. D.R. Sharma, Department of Sanskrit, Panjab University, Chandigarh.

3. Rathore, Pushpa. *Smriti-sahitya mein istri : Ek tulnatmak evam vishleshnatmak adhyayan.* Panjab. Dr. Vikram Kumar, Department of Sanskrit, Panjab University, Chandigarh.

4. Seema. *Shankar vedant mein anandvad ka swarup.* Panjab Prof. Ram Murti Sharma, Department of Sanskrit Panjab University, Chandigarh.

5. Sharma, Ashima. *Shankh-parabhav vyayog. Bham Vikram vyog tatha juniya-vyayog ka tulnatmak natakiya adhyayan.* Panjab. Dr. Anirudh Joshi, Department of Sanskrit, Panjab University, Chandigarh.

6. Sharma, Harish Kumari. *Vartman manodaihik anidradi chittdosh evam mathyog : Ek sameekshatmak adhyayan.* Panjab. Dr. D.R. Sharma, Department of Sanskrit, Panjab University, Chandigarh.

7. Sharma, Kamle Devi. *Balmiki Ramayana ke paripreksh mein parisark sankalpa.* Panjab. Dr. Anirudh Joshi, Department of Sanskrit, Panjab University, Chandigarh.

8. Sompal. *Atharvyede Upmalankar.* Panjab. Dr. Anirudh Joshi, Department of Sanskrit, Panjab University, Chandigarh.

Punjabi

1. Amarjeet Kaur. *Guru Ravi Dass ate Guru Nanak Dev dee bani da samajik sandarbh vich tulnatmak adhyayan.* Panjab. Dr. C.L. Narang, and Dr. C.P. Singhal, Department of Guru Ravi Dass Chair, Panjab University, Chandigarh.

2. Avtar Singh. *Punjabi kav-natak, sidhant ate sarup : Kavinder Ravi de kav-natakan de sandarbh vich.* Panjab. Prof. Raghbir Singh, Department of Punjabi, Panjab University, Chandigarh.

3. Gurmej Singh. *A comparative study of the novels of Nanak Singh and Mulk Raj Anand,* Panjab. Dr, Naresh, Department of Bhai Vir Singh Chair, Panjab University, Chandigarh and Prof. M.L. Raina, Department of English, Panjab University, Chandigarh.

4. Gurvinder Kaur. *Gurdial Singh ate Fanishwar Nath Renu de novelan da tulnatmak adhyayan.* Panjab. Dr. Naresh, Department of Bhai Vir Singh Chair, Panjab University, Chandigarh.

5. Jalour Singh. *Kulwant Singh 'Virak' dian kahanian vich manavvad.* Panjab. Dr. Nahar Singh, Reader, Department of Punjabi, Panjab University, Chandigarh.

6. Jaswinder Kaur. *A comparative study of the prose of Bhai Vir Singh and Prof. Puran Singh.* Panjab. Dr. Naresh, Department of Bhai Vir Singh Chair, Panjab University, Chandigarh.

7. Karnail Singh. *Guru Ravidass Jee dee bani vich rahasanubhuti.* Panjab. Prof. Darshan Singh, Department of Guru Nanak Sikh Studies, Panjab University, Chandigarh and Dr. D.P. Singhal, Department of Guru Ravi Dass Chair, Panjab University, Chandigarh.

8. Rajwant Kaur. *Bharat de swatantarta sangram de sandarbh vich Kesar Singh (Giani) de novlan da adhyayan.* Panjab. Dr. Raghbir Singh Sirjana, School of Punjabi Studies, Panjab University, Chandigarh.

9. Satwant Kaur. *Nanak Singh te Sohan Singh Sital de novelan da tulnatmak adhyayan.* Panjab. Dr. Naresh, Bhai Vir Singh Chair, Panjab University, Chandigarh.

10. Satwant Kaur. *Punjabi Sufi kav vich maut dee chetna.* Panjab. Prof. Kesar Singh Kesar, School of Punjabi Studies, Panjab University, Chandigarh.

Hindi

1. Chugh, Neeru. *Jainendar, Ilachander Joshi totha Agyey ke upanyason ka samaj manovaigyanik adhyayan.* Panjab. Dr. Yash Gulati, Department of Hindi, Panjab University, Chandigarh.

2. Madan Mohan. *Harivansh Rai Bachchan aur Narendra Sharma ke geetikavya kee vishayagat evam shilpgat tulana.* Panjab. Dr. (Mrs.) Santosh Sharma, Department of Hindi, Directorate of Correspondence Courses, Panjab University, Chandigarh.

3. Madhu Bala. *Nagriya bodh ke sandarbh mein Mohan Rakesh ka katha sahitya.* Panjab. Dr. Yash Gulati, Department of Hindi, Panjab University, Chandigarh.

4. Meena. *Samkaaleen Hindi natakon ka samaj shastriya adhyayan.* Panjab. Dr. V.R. Mehndiratta, Department of Hindi, Panjab University, Chandigarh.

5. Parveen Kumari. *Swatantaryottar Hindi natakon mein vyang.* Panjab. Dr. V.R. Mehndiratta, Department of Hindi, Panjab University, Chandigarh.

6. Pratima, *Narendra Sharma aur Naresh Mehta ke prabandh kavyon ke kathasroton ka tulnatmak adhar tatha samkaleen prasangikta.* Panjab. Dr. (Mrs.) Santosh Sharma, Reader, Department of Hindi, Directorate of Correspondence Courses, Panjab University, Chandigarh.

7. Sandhir, Poonam. *Hindi upanyason mein nar-nari sambandhon ka badalta swarup: Prem Chand se aaj tak.* Panjab. Dr. M.P. Bhardwaj, Department of Hindi, Panjab University, Chandigarh.

8. Sujatha, M. *Humanitarianism in new poetry* Kerala. Dr. N. Suresh, Department of Hindi, S.N. College, Quilon.

9. Sushil Kumar. *Ghananand ke kavya mein saundrya-bodh.* Panjab. Dr. D.P. Bhardwaj, Department of Hindi, Panjab University, Chandigarh.

10. Vinod Bala. *Nagarjuna ke katha sahitya men samajik chetna.* Panjab. Dr. Yash Gulati, Department of Hindi, Punjab University, Chandigarh.

11. Vohra, Sadhna. *Lokatattva ke sandarbh mein Kabir ke kavya ka mulyankan.* Panjab. Prof. D.P. Maini, Department of Hindi, Panjab University, Chandigarh.

Urdu

1. Mohammad Sultan. *Prem Warbatoni 'Fun aur Shakhsiyat.* Panjab. Dr. Haroon Ayub, Department of Urdu, Panjab University, Chandigarh.

Geography

1. Harish Kumar. *Regional dimensions of demographic dynamism in the Haryana Territory of National Ca Region, 1971-81,* Panjab. Dr. R.C. Chandna, Departm of Geography, Paniab University, Chandigarh.

2. Jasbir Singh. *Urbanization policy for an Indian st A case study of Panjab.* Panjab. Dr. Gopal Krishan, Dep ment of Geography, Panjab University, Chandigarh.

3. Pawan Kumar. *Some aspects of agriculture in Hima Pradesh: A spatial perspective,* Panjab. Dr Jhujar Si Department of Geography, Panjab University, Chandigar

4. Surinderjit Kaur. *Regional dimensions of demogra dynamism in the Uttar Pradesh Territory of National Cap Region, 1971-1981,* Panjab. Dr. R.C. Chandra, Departn of Geography, Panjab University, Chandigarh.

History

1. Meetei, Ningombombasanta. *Socio-economic cha in Manipur, 1891-1947.* Panjab. Dr. J.S. Dhanki, Dep ment of History, Panjab University, Chandigarh.

2. Paslithil, A. *Kerala Grandhasala Sangham and socio-cultural contributions.* Kerala. Dr. K K. Kusum Reader, Department of History, University of Kerala, Ka vattom.

3. Rajesh Veer. *Madan Mohan Malaviya: A study his political and constitutional ideas..* Panjab. Dr. Dhanki, Department of History, Panjab University, Cha garh.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Library & Information Science

1. Manorama Raju, O.R. *Personnel management of university libraries : A study of organizational climate.* Madras.

Psychology

1. Atia, Adnan Fawzi. *A psychological study of drug abuse in relation to personality.* Baroda.

2. Bhattacharya, Rina. *A study of the effects of various environmental conditions of the personality of post adolescent boys and girls.* Delhi.

3. Chaturvedi, Kiran. *Leadership styles of managers of commercial banks in India.* SNDT. Dr. B.L. Barnes, Reader, Department of Psychology, SNDT Women's University, Bombay.

4. Karunakaran Nair, Sreekumar. *Role of cognitive styles in job cognitions and job attitudes.* Nagpur. Dr. A.V. Kulkarni, Department of Psychology, Nagpur University, Nagpur.

5. Mitra, Snigdha. *A neuropsychological study of biodynamic correlates (promoters) on learning efficiency of albion rats observable in ionic environs.* Calcutta.

6. Prateep Kumar. *A comparative study of the consu dominated and market-dominated factors, that influence buyer's purchasing decisions.* Magadh.

7. Rao, Sharada. *Irrational beliefs among neuroti Their psychological management.* Bangalore. Dr. K. Sath vathi, Assoc. Prof., Department of Clinical Psychol National Institute of Mental Health and Neuro Scien Bangalore.

8. Verma, Nomita. *Life stress, social support coping individuals with psychological distress.* Bangal Dr. G.G. Prabhu, Prof. and Head, Department of Psy logy, National Institute of Mental Health and Ne Sciences, Bangalore.

Sociology

1. Chavda, Shantaben K. *Sociological analysis of problem of suicide in the urban area of Saurashtra with spe reference to Rajkot City.* Saurashtra. Dr. P.S. Jeth Prof. and Head, Department of Sociology, Saurashtra U versity, Rajkot.

2. Ramavani, L. *Migrant construction workers in M ras City : A sociological study of women and developm* Madras.

3. Ranganathan, M. *A study of the participation of lege student-volunteers in service and rehabilitative pro-mmes of the National Institute of Mental Health and uro Sciences.* Bangalore. Prof. G.N. Narayana Reddy, rector, and Prof. I.A. Sharriff. Head, Department of ychiatric Social Work, National Institute of Mental alth and Neuro Sciences, Bangalore.

4. Satyendra Kishore. *Re-settlement of ex-servicemen India : Problems, patterns and prospects.* JNU. Prof. K. Oommen, Centre for the study of Social Systems, waharlal Nehru University, New Delhi.

5. Subramanian, Ramayyar. *A sociological study of adership in small scale industries in an urban complex in mil Nadu.* Barkatullah. Dr. I.S. Chauhan, Prof. and ead, Department of Sociology, Barkatullah Vishwa-dyalaya, Bhopal.

cial Anthropology

1. Das, Sibirranjan. *Persistence and change in Bhumia lture.* Calcutta.

2. Maitra, Sunilranjan. *The Chakma of Tripura : A nctional analysis of culture transformation.* Calcutta.

olitical Science

1. Chetiya, Anima. *Political porties in Assam during 952-1980. An analytical study.* Gauhati. Prof. D.P. arooah, Department of Political Science, Gauhati Univer-ty, Guwahati.

2. Damle, D.B. *Indian migrants in the United Arab mirates.* JNU. Prof, R.C. Sharma, Centre for Inter-ational Politics, Organisation and Disarmament, Jawahar-l Nehru University, New Delhi.

3. Pathak, Nagendra. *Development administration and tegrated rural development programme : A case study of e Sasaram Block, District of Rohtas, Bihar.* Magadh.

4. Rangaswamy, P.R. *D.M.K. : A study.* Madras.

5. Shamsunnisa. *Status of Muslim women in Hyderabad.* smania.

6. Tailer, Meenakshi. *Bharat mein sansadiya shasan ke uchitya ka parikshan : Madhya Pradesh ke Bhopal Nagar ke uddhijeevi varga ke sarvekshan per adhirt.* Vikram. Dr. Smt.) Rashmi Shrivastava, Reader, Department of Political cience, Vikram University, Ujjain.

conomics

1. Abdul Aziz. *Performance appraisal of tyre industry in ndia.* Rajasthan. Dr. Abrar Ahmed Khan, Member of arliament, (Rajya Sabha) 123 South Avenue, Delhi.

2. Assadi, Morteza. *Import substitution strategy and ndustrialization in Iran from 1962-77.* Jamia. Dr. Athar aza Bilgrami, Reader, Department of Economics, Faculty f Social Sciences, Jamia Millia Islamia, New Delhi.

3. Bagali, Siddappa Kotrabasappa. *Regional banks and ural development in Karnataka with particular reference to he regional rural banks in Bellary and Raichur Districts.* arnatak. Dr. N.S. Hiremath, Reader, Department of tudies in Economics, Karnatak University, Dharwad.

4. Bhat, B. Jayarama. *Road transport and rural development : A case study of Dakshina Kannada District.* Mangalore. Dr. N.S. Bhat, Prof. and Head, Department of Economics, Mangalore University, Mangalagangotri.

5. Chachadi, Ningappa Gangappa. *The integrated rural development programme and rural poverty in Karnataka : A case study of Dharwad District.* Karnatak. Dr. M.C. Kodli, Prof. and Chairman, Department of Economics, Karnatak University, Dharwad.

6. Dutta, Siba Kanta. *Role of gaon panchayat level cooperative societies in rural development of Assam, a politico-economic study : A case study of Dibrugarh District.* Dibrugarh. Prof. Atul Goswami, Department of Economics, Dibrugarh University, Dibrugarh.

7. Indumathi, K.T. *Economics of public expenditure with special reference to Tamilnadu Government, 1960-61 to 1984-85.* Madras.

8. Natarajan, C. *The economic history of Erode Municipality with particular reference to its income and expenditure, 1960-1985.* Madras.

9. Pal, Santiranjan. *A quantitative analysis of the problems of irrigation in some selected di stricts of West Bengal.* Calcutta.

10. Sharma, Krishan Dutt. *Farming systems in Himachal Pradesh.* HP Krishi. Dr. T.V. Moorti, Department of Agricultural Economics, College of Agriculture, Palampur.

11, Soni, Pushpa. *Ujjain jile mein krishi vikas mein bankon ka yogdan.* Vikram. Late Dr. A.K. Bhattacharya and Dr. V.K. Parekh, Reader, Department of Economics Vikram University, Ujjain.

Education

1. Akthar, H. Nazeem. *A study of the non-formal educational needs of the Muslim women in the city of Madras and developing an appropriate non-formal educational curriculum.* Madras.

2. Chandra, G. Joice. *Correlates of written English at the plus two stage.* Madras.

3. Chattopadhyay, Sandhya. *Ayurveda manastattwa.* Calcutta.

4. Devanathan, S. *A study of reading skills in Tamil of pupils studying in 5th and 8th standards.* Madras.

5. Gurunadham, M,T.V. *A study of teacher's opinions of a model designed for communicative teaching of English in schools.* Nagarjuna.

6. Jayalakshmi, P. *Personality correlates of casual attribution and aehievement striving of student teachers.* Madras.

7. Jeyaraman, P. *Maternal strategies for regulating children's behaviour.* Mapras.

8. John, Rajaseeli. *Physical education programme for the mentally retarded adolescent girls.* Madras.

9. Joshi, Vibha Ramdutt. *To study the effectiveness of school television programme in science at the secondary school level.* Baroda.

10. Konwar, Lakshmi Nath. *A study of socialisation practices at home and school and development of personal achievement motivation among secondary school pupils in Assam.* Dibrugarh. Prof. P.P. Gokulanathan, North Eastern Hill University, Shillong.

11. Korde, Arvind Gopalrao. *Design and tryout of a course in English based on notions and language functions for use at higher secondary level in Gujarat.* Patel. Dr. B.A. Shah, Lecturer, H,M. Patel Institute of English Training and Research, Vallabh Vidyanagar.

12. Mani, Jacob. *A study of educational innovations in affiliated colleges of India.* Baroda.

13. Patel, Jayantilal Somabhai. *A comparative study of organizational climate of primary schools of Ahmedabad and Baroda cities.* Patel. Dr. C.C. Pathak, Reader and Head, Department of Education, Sardar Patel University, Vallabh Vidyanagar.

14. Patel, Somabhai Ambaram. *An investigation into the impact of training in conservation ability of the pupils upon their conceptual understanding.* Patel. Dr. D.N. Patel, Reader (Retd.), M,B. Patel, College of Education, Sardar Patel University, Vallabh Vidyanagar.

15. Prabhakar, Annamma. *Nurse tutor's preparation, perception and performance of their role in diploma schools of nursing in Maharashtra.* SNDT.

16. Prabhavatamma, K. *An investigation into the creative writing process and identification of the creative writing ability in English in students teachers in the intercultural connotation.* Baroda.

17. Suri, Ishwar Saran. *An investigation into the structure of reasoning ability of 15 years old students belonging to rural and urban areas.* Jamia. Dr. Banamali Sen Gupta Reader (Retd.), Faculty of Education, Jamia Millia Islamia, New Delhi and Prof. Devendra Joshi, Dean, Faculty of Education, Head, Department of Teacher Training and Non-formal Education, Jamia Millia Islamia, New Delhi.

18. Suriyakumar, T. *Cognitive styles and socio-personality variables : An association study at the higher secondary level.* Madras.

19. Tiwari, Ramkumar Hiralal. *Prachin Krishna sahitya mein drigochar honewala sharirik shiksha darshan.* Nagpur. Dr. S.H. Deshpande, Prof., Department of Physical Education, H.V.P. Mandal's Degree College of Physical Education, Amravati.

Commerce

1. Arunachalam, P. *Handloom silk industry in Tamil Nadu : A study of problems relating to production and marketing.* Madras.

2. Bhatt, Dhruvalata Dinesh Kumar. *Analysis of commercial bank deposits in India with reference to post-nationalization period.* Baroda,

3, Dhand, Rakesh Kumar. *Sohagpur prakshetra mein koyla sanchalan ka arthik vishleshan.* Vikram. Dr. G.P. Sharma, Prof., Department of Commerce, Madhav College, Ujjain.

4. Dhinakaran, Paul. *Youth and mass media.* Madras.

5. Krishnama Chary, P. *Financial management of Andhra Pradesh State Enterprises with special reference to selected undertakings.* Kakatiya. Dr. K. Rajeshwar Rao, Reader, Department of Commerce, Kakatiya University, Warangal.

6. Krishna Murthy, T. *Organisation and working of rural markets in Telangana Region.* Kakatiya. Dr. Ojha Ghanshyam Das, Reader, Department of Commerce, University Evening College, Warangal.

7. Mishra, Dharma Nand. *Problems and prospects of growing entrepreneurship in Bihar with special reference to Gaya District.* Magadh,

8. Namasivayam, B. *Operational efficiency of handloom weaver's cooperative societies in Salem District of Tamil Nadu.* Madras.

9. Nirmala, K. *Leadership behaviour of women executive in the banking sector.* Madras.

10. Ravichandran, M. *Consumer perceptions and purchase decisions : A study of urban and semi-urban consumers of durable goods.* Madras.

11. Rudraraju Krishna. *Marketing of commercial crops : A comparative study of cotton, tobacco and chillies in Guntur District, Andhra Pradesh.* Andhra.

12. Sarma, Binoy Krishna. *The practice and policy of depreciation in Banglad esh.* Calcutta.

13. Seetharaman, A. *Optimisation of marketing production and financing systems for handloom textiles.* Madras.

14. Senad, Ramesh Purushottam. *Nagpur shehrateel krishi vipanan vyavastheche mulyamapan.* Nagpur. Dr. K.R. Dixit, G.S. College, Nagpur.

15. Srinivasan, T. *A study of the personnel management in the co-operative spinning mills in Tamil Nadu with special reference to the working conditions and industrial relations.* Madras.

Home Science

1. John, Chinnama. *Studies on reduction in dietary buls of young child foods with amyles/amylaserich foods (ARF).* Baroda,

2. Sheokand, Saroj. *A study of the effect of acrylic polymer finish on shrink resistance and related properties of wool, cotton, and wool cotton blend fabrics.* Baroda.

Management

1. Kusuma, N. *Management control system in state enterprises of A.P. : A study of selected manufacturing units.* Kakatiya. Prof. A. Shankaraiah, Department of Commerce and Business Management, Kakatiya University, Warangal.

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RECRUITMENT RULES FOR THE ABOVE POSTS

(1) Principal

Essential

(1) Second Class Bachelor Degree in the concerned Faculty.
(2) Second Class Master Degree in the concerned Faculty.
(3) Ph.D. in a subject related to the concerned Fuculty.
(4) At least 10 years of experience of teaching/research extension education in the concerned faculty out of which atleast five years experience will be as a Professor or its equivalent post.
(5) Good knowledge of the educational system prevalent in the world and familiarity with modern concept of organization and co-ordination of the teaching / research / extension education activities.
(6) Age : Below 55 years—Age Relaxable in suitable cases and in case of person already in the employment of the University.

(2) Professor

Essential

(1) Second Class Bachelor Degree in the concerned Faculty.
(2) Second Class Master Degree in the concerned field
(3) Ph.D. in a subject related to the concerned field.
(4) At least 10 years of experience of teaching/research/extension education in the concerned field of which five years of experience must be in the concerned specialised subject as Associate Professor or its equivalent post.
(5) Age : Below 55 years.

(3) Associate Professor

Essential

(1) Second Class Bachelor Degree in the concerned Faculty.
(2) Second Class Master Degree in the concerned Field
(3) Ph.D in a subject related to the concerned field.
(4) At least 7 years of experience of teaching/research/extension education in the concerned field of which three years of experience must be in the fieid of concerned specialised subject as Assistant Professor or its equivalent post.
(5) Age : Below 55 years

(4) Assistant Professor

Essential

(1) Second Class Bachelor's Degree in the concerned Faculty.
(2) Second Class Master Degree in the concerned field.
(3) At least two years of experience with M.Sc Degree in the teaching/ research/extension education in the concerned field.
(4) Ph.D Degree will be preferable.
(5) Age : Below 55 years

Notes :

(1) Notwithstanding anything contained in the above rules of qualifications for the posts of Principal,

Professor, Associate Professor and Assistant Professor or its equivalent posts, relaxation in individual case in respect of degree or class of degrees, experience and age etc. will be considered by the Board of Management on the recommendation of the Selection Committee for the concerned post.

(2) Gujarat Agricultural University Employees who has completed his post-graduate requirements and submitted his Ph.D thesis can also apply for the concerned post.

(3) Persons of Indian Forest Service and State Forest Service can also apply for the post of Forestry Discipline.

Instructions

(1) Application Forms and other terms and conditions can be had from the Registrar, Gujarat Agricultural University, Sardar Krushinagar-385506, District Banaskantha on cash payment of Rs. 2/- (Money Order will not be accepted) or by sending Crossed Indian Postal Order of equal values issued in favour of Gujarat Agricultural University Fund Account alongwith the self-addressed envelope (23 cm x 11 cm) affixed with 2·20 paise postage stamps.

(2) The application duly completed in all respects with application fee of Rs. 50/- in the Form of I.P.O. drawn in favour of "Gujarat Agricultural University Fund Account" should reach to the Registrar at above address on or before 25-10-1989 invariably through proper channel.

(3) The candidates already in the service of this University have to apply through their respective office in the prescribed form with ten copies of the authenticated biodata without I.P.O.

(4) The candidates should send their application through proper channel.

(5) All the candidates called for Interview will have to attend the Interview at their own cost.

(6) Applications made in the printed form supplied by this office only will be accepted.

(7) Incomplete applications will not be considered.

(8) The University reserve their full rights to fill up or not to fill up any or all the posts and to give or not to give appointment to the candidates selected by the Selection Committee.

(9) Canvassing in any form will completely disqualify the candidate.

(10) Selected Candidates for the above posts or category shall be posted at any Campus or Centre of the University and transferable between education, research and extension activities/projects. Outside candidates will have to resign from the previous employment. There will be two years of probation for all the selected candidates and will be appointed under written contract.

(11) The candidates who have applied earlier in response to our advertisement No. 6/88 dated 16-9-88 need not apply again.

R.J. Patel
REGISTRAR

UNIVERSITY OF DELHI

DELHI-110007

Ref : Advertisement No. Estab. IV/I23/89 dated 11-9-89 for the teaching and other posts

CORRIGENDUM

The Special/Desirable qualifications for the following posts may be read as noted below against each post :

Department	Post	Special/Desirable qualifications
ANTHROPOLOGY	P-2	(For P-1)—Any branch of Social Anthropology with extensive field work experience in areas of Cultural Ecology with special reference to tribal and peasant societies. (For P-2)—Any branch of Physical Anthropology with special reference to Human Ecology/Prehistoric Archaeology with special reference to Human Ecology.
	R-2	(For R-1)—Any branch of Social/Cultural Anthropology. (and R-2) with special reference to Cultural Ecology.
	L-4 (1 temp. upto 30.6.90)	(For L-1)—Any branch of Physical Anthropology with special reference to Human Ecology. (For L-2)—Any branch of Social Anthropology with special reference to Cultural Ecology. (For L-3)—Extensive field work in Prehistoric Archaeology with special reference to Human Ecology. (For L-4)—Experience in any branch of temp,) Social Anthropology).
COMMERCE	R-1	(For R-1)—Specialisation in International Business.

P = Professor R = Reader L = Lecturer

Other details of the above posts remain unchanged. The last date for receipt of applications for these posts has been extended upto 25th October, 1989. For all other posts notified in the above advertisement the last date for receipt of applications remains unchanged.

Madan Mohan
REGISTRAR

SARDAR PATEL UNIVERSITY

VALLABH VIDYANAGAR 388 120 (GUJARAT)

Notification No. EST/4 (1989-90)

SITUATION VACANT

Applications are invited in the prescribed forms which can be had from the University Office on payment of Rs. 5/- in Cash or by Indian Postal Order for the following posts so as to reach the undersigned on or before 25.10.1989.

Sr. No.	Name of the Post	No. of posts	Pay Scale
Professor each in :			
1.	Education (Methodology or Comparative Education)	1	Rs. 4500-7300
2.	Professor of Chemistry (Polymer/ Material Science)	1	Rs. 4500-7300
3.	Professor in Bio-Systematics	1	Rs. 4500-7300
Reader each in :			
1.	Statistics	1	Rs. 3700-5700
2.	Chemistry (Co-ordination Chemistry)	1	Rs. 3700-5700
3.	Animal Science	1	Rs. 3700-5700

All the posts carry benefit of DA, GPF, Gratuity and Pension as per rules of the University.

Detailed qualifications will be supplied alongwith the prescribed application forms.

Preference will be given to qualified candidates belonging to SC/ST Castes.

N.G. Upadhyaya
REGISTRAR

SOUTH GUJARAT UNIVERSITY

UNIVERSITY CAMPUS, UDHNA-MAGDALLA ROAD,

POST BOX NO. 49, SURAT-395 007

Applications are invited in the prescribed forms (in eight copies) for the following teaching posts in Post-Graduate Departments of the University :

Sr. No.	Department	Posts
1.	Business and Industrial Management	* (1) One Reader *** (2) One Lecturer
2.	Physics	** (1) One Lecturer (Computer Science Hardware/Software)
3.	Aquatic Biology	** (1) One Lecturer
4.	Education	*** (1) One Reader
5.	English	* (1) One Lecturer
6.	Public Administration	** (1) One Lecturer
7.	Mathematics	** (1) One Reader * (2) One Lecturer
8.	Comparative Literature	** (1) One Lecturer

NOTE :

* These posts are reserved for Scheduled Caste.

** These posts are reserved for Scheduled Tribe.

*** These posts are reserved for Socially and economically backward classes of Gujarat State (Baxi panch classification of Gujarat State).
Only candidates belonging to the above classes need apply.

Pay Scale for the above posts are as under :

(1) Reader : Rs. 3700-125-4950-150-5700

(2) Lecturer : Rs. 2200-75-2800-100-4000.

In addition to pay, the permanent teachers of the University Departments are entitled to draw Dearness Allowance, House Rent Allowance and other benefits like Pension-cum-Gratuity, Leave Travel Concession and Medical benefits.

Candidates belonging to Scheduled Castes/Scheduled Tribes and Socially and Economically Backward Classes (Baxi-panch of Gujarat State) should clearly indicate in their application the caste to which they belong and attach necessary certificate from authorities in Gujarat State alongwith their application.

Information about qualifications and special field in which the appointment on each post is to be made will be supplied with prescribed application forms which can be had from the undersigned on payment of Rs. 7/- in cash or by Postal Order alongwith self-addressed envelope of 22 cm x 13 cm. size with postal stamp worth Rs. 4-60 ps. affixed thereon Canvassing in any form will disqualify the candidates.

The last date for receipt of application is 20-10-89.

N.K. Desai
Offg. REGISTRAR

TILAK MAHARASHTRA VIDYAPEETH, PUNE

Vidyapeeth Bhavan, Gultekadi

PUNE 411 037

Deemed University

Advt. No. 21 **Dated : 27-9-1989**

Applications are invited for the post of "READER" in Social Sciences preferably Economics at the Nehru Institute of Social Studies of this Vidyapeeth so as to reach on or before 25th Oct., 1989.

(1) Pay Scale : Rs. 1200-50-1300-60-1900 plus allowances.

(Subject to revision as per U.G.C. recommended scale of pay)

(2) Age Limit : 45 Years

(3) Qualifications : Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) Research or (ii) Innovation in teaching methods, or (iii) Production of teaching materials.

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position. This condition may be relaxed in the case of candidates with outstanding research work.

Ability to teach interdisciplinary Courses through Marathi medium also.

Desirable : Interest in problems of Rural Society. Constructive Social and field work. Desire for creative work.

(4) The application should contain :

(i) Full details of educational qualifications and research experience.
(ii) Names and addresses of two referees not related to him/her.
(iii) Attested copies of certificates in support of qualifications, age, experience etc.

The application should be sent in seven copies. The persons already in service should apply through proper channel. The applicants, if called for interview will have to come at their own cost.

Preference will be given to Scheduled Caste candidate, if found eligible and qualified.

Dr. C.L. Kshirsagar
REGISTRAR

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UNIVERSITY OF CALICUT

ADMINISTRATION 'F' SECTION
CALICUT UNIVERSITY P.O. 673 635
No. Ad F2/2824/88
Dated : 25th August, 1989

NOTIFICATION

Applications are invited from qualified candidates for appointment to the following post in the University.

Name of Post : Controller of Examinations.

Scale of Pay : Rs 2450-3600

Age : Between 40 and 50 years as on 1-7-1989.

No. of Vacancies & nature of vacancies 1 (Permanent) Open

Qualification : A First Class or Second Class Master's Degree or equivalent qualification About 5 years' teaching experience and 5 years' administrative experience in a responsible post including management of staff in a University or College of Education, Department or similar institution

Application in plain paper containing details of age, qualifications, experience (both teaching and administrative) etc. alongwith attested true copies of certificates to prove the service is to be sent by Registered Post to be received by the Registrar, University of Calicut, Calicut University P.O. 673 635 on or before the closure of office hours on 30.10.1989. An application fee of Rs. 50/- should be remitted to the credit of any of the Heads of Account specified below and the original challan receipt should accompany the application form.

1. 8658-102-04 (1) B. CUS Account of the University of Calicut for remittance in all State treasuries except in Malappuram District.
2. 8443-00-106 CUF for remittance in State Treasuries in Malappuram District.
3. No. II Current Account of the Finance Officer, University of Calicut at the State Bank of Travancore, Thenhipalam.

Remittance from outside Kerala can be made by crossed Postal Order in favour of the Finance Officer, University of Calicut which is made payable at the Calicut University P.O.

Dr. S. Balaraman
REGISTRAR

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SCHOOL OF PLANNING AND ARCHITECTURE

NEW DELHI-110002

(Deemed to be a University)

ANNUAL CONVOCATION

The Eighth Annual Convocation of the School of Planning and Architecture will be held on **Friday, the 20th October, 1989 at 5.00 P.M.** in the Architecture Campus of the School at 6, Block-B Indraprastha Estate, New Delhi-110002.

Students, who graduated from the School in 1989, are cordially invited to attend the Convocation and receive the degrees.

E.F.N. Ribeiro
DIRECTOR

GOKHALE INSTITUTE OF POLITICS AND ECONOMICS

PUNE-411 004

Applications are invited for the posts of Professors (one in any area of Economics and one in International Economics), Reader (in the area of Agricultural Economics), Lecturers (one in any area of Economics and one in International Economics), Librarian (in Reader's grade) all in U.G.C. pay-scales. Application forms and information regarding prescribed minimum qualifications and other particulars may be obtained from the Registrar of the Institute by sending a Postal Order for Rs. 10/-. Preference to Scheduled Caste/Tribe, Backward Class candidates, other things remain equal. Application forms duly completed should reach Prof. V.S. Chitre, Director by **November 20, 1989.**

KURUKSHETRA UNIVERSITY

KURUKSHETRA

Advertisement No. 3/89

Applications on the prescribed form are invited for the following posts :

University Teaching Departments

1. Professors (Grade : Rs. 4500-150-5700-200-7300 (UGC).

(I) Mathematics (1)

(ii) Psychology (1)

Specialization : Comparative Psychology / Applied Psychology Preferably mental abilities.

(iii) Institute of Sanskrit & Indological Studies : (1)

Specialization : Eminent Sanskrit Scholar having experience of Lexicography, sound knowledge of English and experience of editing Journal.

He will be required to supervise preparation of a Word Concordance of the Mahabharata, and editing of the Digest of Indological Studies, and to guide staff members on their personal projects.

(iv) Guru Ravi Dass Chair (1)

Qualifications : 1. M.A. in Hindi with Ist or high second class with consistently good academic record.

2. Ph.D. Hindi or published work of high standard.

3. Atleast 10 years teaching experience.

4. Specialization in Medieval 'Bhakti-Literature' with particular reference to 'Nirgun school'.

5. A minimum of five publications during the last five years in the specialization on related matters.

(v) Physical Education : (1)

2. Readers. (Grade : Rs. 3700-125-4700-150-5700 (UGC)

(i) Hindi (1)

(ii) English (1)

Specialization : English Language Teaching (B.L.T.)

(iii) Botany (1)

(iv) Chemistry (1)

Specialization : Inorganic/Physical/ Organic.

3. Lecturers (Grade : Rs. 2200-75-2800-100-4000 (UGC)

(i) Chemistry (4) (One temporary but likely to continue).

Specialization : Physical Chemistry (2) Physical/In-Organic (1) Physical/ Organic (1) Reserved for Scheduled Caste Candidates. If a candidate belonging to Scheduled Caste is not available, this post will be filled up from amongst Backward Class candidates.

(ii) Russian (1)

(iii) Earth Sciences—Applied Geophysics (1)

(Temporary leave vacancy)

Qualifications : M.Tech./M.Sc. Tech. in Applied Geophysics, capable of teaching Seismic, Electrical, Magnetic and Gravity methods of prospecting and well Logging, Signal Processing, Seismology and Geophysical Instrumentation prescribed in M.Tech. Applied Geophysics syllabus.

Desirable : Ph D. Degree or Equivalent published Research work. Preference will be given to candidates having knowledge of Fortran-IV Programming or Electronics.

(iv) English (1) (Temporary but likely to continue)

(v) Physics (1) Electronics (Reserved for S.C. candidates)

(vi) Political Science (1)

Specialization : Comparative Politics/ Internal Politics/International Relations.

(vii) Education (2) Temporary but likely to continue.

Specialization (for first post leave vacancy) : Comparative Education/ Philosophy of Education

(for second post) : Measurement & Evaluation/Economics of Education.

Preferential

Qualifications (for both posts) : Master's Degree in the basic discipline.

(viii) Philosophy (1)

Specialization : Indian Philosophy with special reference to Buddhism.

(ix) Psychology (1) Leave vacancy-Reserved for S.C. (Temporary)

(x) Public Administration : (1)

Specialization : Public Finance OR Financial Administration.

4. Women's Studies Research Centre

(I) Research Officer: (1) (Grade : Rs. 2200-75-2800-100-4000 (UGC)

Qualifications : (i) A Doctorate degree or research work of an equally high standard.

(ii) Good academic record with atleast second class (C in the seven point scale) Master's degree in a relevant subject from an Indian University or an equivalent degree from a foreign University.

(iii) The candidate should have research work in the area of Women's Studies.

(II) Junior Research Fellow (2) Value: Rs. 1800/- p.m. fixed for those who have passed NET test.

Rs. 800/- p.m. for those who have not qualified NET test. The JRF appointed under this scheme will also be eligible for other benefit as provided in the UGC guidelines.

Qualifications : M.A. (Education/ M.Ed. and M.Phil degree with atleast 55% marks with consistently good academic record. The candidates who have qualified the National test will be given first preference.

5. University Colleges Kurukshetra

Lecturers (Grade : Rs. 2200-75-2800-100-4000 (UGC).

(i) English (2) (One leave vacancy)

(ii) Chemistry (1)

Specialization : Inorganic Chemistry

(iii) Geography (1)

(iv) Philosophy (1) Temporary but likely to continue.

(v) Hindi (1) Temporary but likely to continue.

6. Research Assistant in Mathematics (1)

Scale : Rs. 1600-50-2300-EB-60-2660

Qualifications : (a) A consistently good academic record with first or high second class (55% marks or grade-B in the seven point scale) Master's degree in Mathematics of an Indian University or an equivalent Degree of a foreign University.

(b) Knowledge of Computer Science.

7. Foreman Air-Conditioning Refrigeration in the Construction Branch (1)

Scale : Rs. 1400-40-1600-50-2300-EB-60-2600

Qualifications : Diploma in Mechanical Engineering with atleast five years professional experience in maintenance of Central Air-Conditioning Plants, Air-Conditioners and Refrigerators. He should be able to do gas charging of Plant and guide Refrigerator Mechanics.

Qualifications can be relaxed for more experienced persons having experience of maintenance with reputed firms like Voltas Ltd., Blue Star etc.

8. Health Centre

(i) Physician (Heart Specialist) (1)

Grade : Rs. 2000-60-2300-75-2900-EB-100-3500+NPA (grade likely to be revised)

Qualifications : M.D. in Medicine with specialization in Heart and its associated diseases from recognised institution. Atleast two years' experience in some reputed hospital.

(ii) Dental Surgeon (1) Grade : Rs. 2000-60-2300-75-2900-EB-100-3500+NPA (grade likely to be revised)

Qualifications : B.D.S. from a recognised University with registration from Medical Dental Council. Atleast two years' experience in some reputed Hospital.

9. Tabla Players (2) (One leave vacancy) for University College in the grade of Rs. 800-15-1010-EB-20-1150)

Qualifications : Sangeet Visharad (B. Music Table) from Pracheen Kala Kendra, Chandigarh.

OR

Sangeet Prabhakar from Prayag Sangeet Samiti, Allahabad.

OR

Sangeet Visharad from Gandharv Mahavidyalaya Mandal, Poona.

10. Tube Well Operator (1) for Lands & Farming Department

Grade : Rs. 775-12-955-EB-14-1025

Qualifications : Matric with I.T.I. Certificate in Trade of Motor/Tractor/Diesel/Electrical/Mechanical.

Preference will be given to the candidates who have experience in the line.

11. Steno-typist (English) (9) (5 for S.C., 3 for Ex-Servicemen and One for Physically handicapped candidates)

Grade : Rs. 950-20-1150-EB-25-1500 plus Rs. 50/- Special Pay.

Qualifications : Matriculation/Higher Secondary/Pre-University at least in 2nd Division or B.A. or its equivalent. English shorthand at 80 w.p.m. and transcription thereof at 15 words per minute. Knowledge of Hindi desirable. **Knowledge of Hindi Stenography will an additional qualification**. The number of posts to be actually filled up can be increased or decreased according to requirement.

For the posts at Serial No. 6,7,8,9,10 & 11 the applications should be on plain paper in the following proforma : (1) Name, (2) Father's Name, (3) Date of Birth, (4) Permanent Address, (5) Correspondence Address, (6) Scheduled Caste/Scheduled Tribe/Backward Class/Ex-Servicemen, (7) Qualifications : (i) Name of the Examination passed, (ii) University/Board, (iii) Marks obtained, (iv) Percentage, (v) Division, (vi) Year of Passing, (vii) Subjects, (viii) Experience, (a) Post held (b) Employer (c) Duration (d) reasons for leaving, (9) Total present pay and pay scale, (1) Pay acceptable, (I1) General remarks, if any. Age limit for non-teaching posts is 18-50 years.

Details of qualifications for posts of Professor, Reader and Lecturer, Research Officer (Serial No. 1 to 5 alongwith the prescribed Application Form can be had from the Manager. Printing & Publications, Kurukshetra University, Kurukshetra on payment of Rs. 10/- on the counter or by making a written request accompanied by self-addressed envelope (23 cms x 10 cms.) duly stamped for Rs. 8/- for sending by registered post alongwith Bank Draft for Rs. 10/- drawn in favour of the Registrar, Kurukshetra University, Kurukshetra and payable at the State Bank of India, University Campus, Kurukshetra.

Applications in the prescribed proforma complete in all respects duly forwarded by the competent authority (in the case of those who are in service), should reach this University by 20.10.1989 alongwith Bank Draft for Rs. 15/- drawn in favour of the Registrar, Kurukshetra University, Kurukshetra and payable at the State Bank of India, University Campus, Kurukshetra or the amount may be deposited with the Cashier of this University and the original receipt be enclosed with the Application Form. SC/ST/BC and Ex-servicemen are exempted from the application fee of Rs. 15/-

The applications not in the prescribed proforma or received after the last date or incomplete applications are liable to be rejected. The candidates who have earlier applied for the post of Professor of Psychology (vide Advt. No. 6/88) and for the post of Lecturer in Psychology Department (Advt. No. 1/89 should apply afresh but they need not send the application fee again.

R.C. Rao
REGISTRAR

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It Pays to Advertise in University News

TAMIL UNIVERSITY
THANJAVUR

Applications in the prescribed form in quadruplicate are invited from the SC/ST candidates only for the following temporary LECTURER posts which are likely to be confirmed. Last date for the receipt of applications in the prescribed form is **31-10-89**.

	Department	No. of Posts Lecturer
1.	Tamil Studies in Foreign Countries	1
2.	School of Indian Languages	1
3.	Scientific Tamil & Tamil Devclopment	1

Scales of Pay : (UGC Scale) Rs. 2200-75-2800-100-4000 with admissible allowances.

Qualifications

Eligibility General : (a) Doctoral degree or research work of an equally high standard and Good academlc record with atleast 2nd class (55% marks). Master's degree in a relevant subject from an Indian University or an equivalent degree from a Foreign University.

Specialisation

For Post No. 1 : Master's Degree and Doctorate in Tamil Literature, Linguistics. Preference will be given for French knowing and having experience in teaching Tamil to Foreigners.

For Post No. 2 : Master's Degree and Doctorate in any one of the Indian Languages or Linguistics with knowledge of Tamil.

For Post No. 3 : Master's Degree and Doctorate in Physics/Chemistry/Biology and specialisation in coining technical terms in Tamil for Science and Technology.

Age : Should have completed 25 years but not completed 35 years.

The required application forms etc. may be obtained by sending a written requisition with clear postal address accompanied by Bank Draft to the Value of Rs. 15/- for SC/ST candidates drawn in favour of the Finance Officer, Tamil University, Thanjavur 613 001 payable at Thanjavur.

All requisitions, however, should be addressed to The Registrar, Tamil University, Thanjavur-1 accompanied by a self-addressed cover bearing postage stamps to the value of Rs. 2.60. The cost of the application blanks will not be refunded under any circumstances.

The University reserves the right to reject any application without assigning any reason if otherwise found suitable.

Dr. P. Chinnian
REGISTRAR

THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA
VADODARA

Notification No. ADE/7/1989-90
Dated : 12th September, 1989

Applications are invited for the following posts in prescribed forms which can be obtained from the University Office on or before **24.10.89** by sending a request to the Officer on Special Duty, M.S. University of Baroda, Vadodara-390 002, alongwith a self-addressed envelope of size 30 cms. x 12 cms. accompanied with a Draft drawn in favour of the Registrar, M S. University of Baroda of Rs. 12/- (Rs. 3/- for members of Schedule Caste and Schedule Tribes) or by payment in Cash at the Reception Counter of University Office for the same during working days only between 11.00 a.m. and 2.00 p.m. No amount will be accepted either by M.O. or by Postal Order except in cases of SC/ST where they can send Postal Order of Rs. 3.00 or pay the amount in cash as stated above. The SC/ST candidates will furnish a copy of the Certificate to that effect at the time of requesting for application form. The SC/ST candidates coming from outside Gujarat State shall have to produce a Certificate from the competent authority of the Gujarat State mentioning that the Gujarat State has recognized them as SC/ST for the purpose. (The amount of Rs. 12/- and Rs. 3/- includes the cost of application form and the Application Fee).

Faculty of Technology and Engineering

1. Professor of Mechanical Engineering —2 posts
2. Reader in Mechanical Engineering —2 posts
3. Lecturer in Mechanical Engineering —5 posts (One each reserved for SC/ST/SEBC)
4. Lecturer in Metallurgical Engineering —3 posts (One each reserved for SC/ST/SEBC)

Faculty of Science

5. Professor of Microbiology 1 post
6. Professor of Chemistry 1 post
7. Reader in Chemistry 1 post
8. Lecturer in Microbiology (Reserved for ST) 1 post

Faculty of Arts

9. Director of Field Archaeology 1 post
10. Reader in Sanskrit 1 post
11. Lecturer in Sindhi 1 post

Faculty of Social Work

12. Reader in Social Work 1 post

Scale of Pay : For Humanities and Sciences and Tech. & Engg.

1. Professor / Director of Field Archaeology : Rs. 4500-150-5700-200-7300
2. Reader : Rs. 3700-125-4950-150-5700
3. Lecturer : Rs. 2200-75-2800-100-4000

The application forms duly completed in all respect alongwith necessary enclosures should reach the Officer on Special Duty, M.S. University, Vadodara 390 002 on or before **15.11.1989**.

Note : Candidates will abide by the Rules and Regulations of the University. Before filling up the Form the candidates are requested to read very carefully the instructions printed on the Application Form and attached with the Notification (a copy of which will be supplied alongwith the application Form).

The completed forms will be received during working days upto **15.11.1989** as stated above.

OFFICER ON SPECIAL DUTY

MANIPUR UNIVERSITY
CANCHIPUR : IMPHAL
CORRIGENDUM
Dated the 25th September, 1989

In the Advertisement No. 9/89 dt. 15-9-1989 please read the **Specialisation** of Associate Professor in Hindi as "Open" and insert the words "Leave vacancy" below the No. of post of Hindi.

Th. Joychandra Singh
REGISTRAR

TELUGU UNIVERSITY

KALA BHAVAN, SAIFABAD, HYDERABAD-4.

3 YEARS OF PROGRESS

Courses Offered	M. Phil and Ph.D. in School of Language Development and Modernisation, School of Literature, School of History, Culture and Archaeology. M.A. in Comparative Studies Literature, Music, Dance, B.A. in Music, Instrumental Music, Dance, Folk Arts, Sculpture, Jyothisha, Journalism.
Seminars and Training Camps	Seminars in Folkloristics, Library movement, Literature, History and Culture Training camps in various Folk Art forms.
Publications	Encyclopaedia Volumes, 105 new publications of Literary and Cultural importance, Dictionaries, Lexicons, reprints of Telugu Classics, "Journal of Telugu Studies" (Quarterly) 'Telugu Vaani' a monthly news bulletin.
Telugu Chairs	Established Telugu Chairs in the Institute of Asian Studies, Madras and Tamil University, Tanjore.
Financial Assistance	Financial Assistance to writers to publish their works.
Library	Central Library at Hyderabad with branches at Srisailam and Rajahmundry Campuses, with more than 45,000 titles including rare books.
Building	Buildings in three campuses costing more than Rs. 2.00 Crores.

Art Exhibitions, Books Exhibitions, Graphic Workshop, State level Drama competitions, Music Festivals, sponsoring cultural troupes, Audio Video cassettes, Donation of books to Telugu Association outside the State and abroad, Ugadi celebrations, State Formation Day Celebrations, Foundation Day Celebrations, Honouring 'Eminent men of letters and artistes, Awards for Literary Creative works. Endowments, Extension Services, monthly pensions to more than 350 indigent Artists etc.

The First convocation was held on 24-9-1989. Hon'ble Dr. Shanker Dayal Sharma, Vice-President of India, was the Chief Guest.

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